

SUMMER 2003

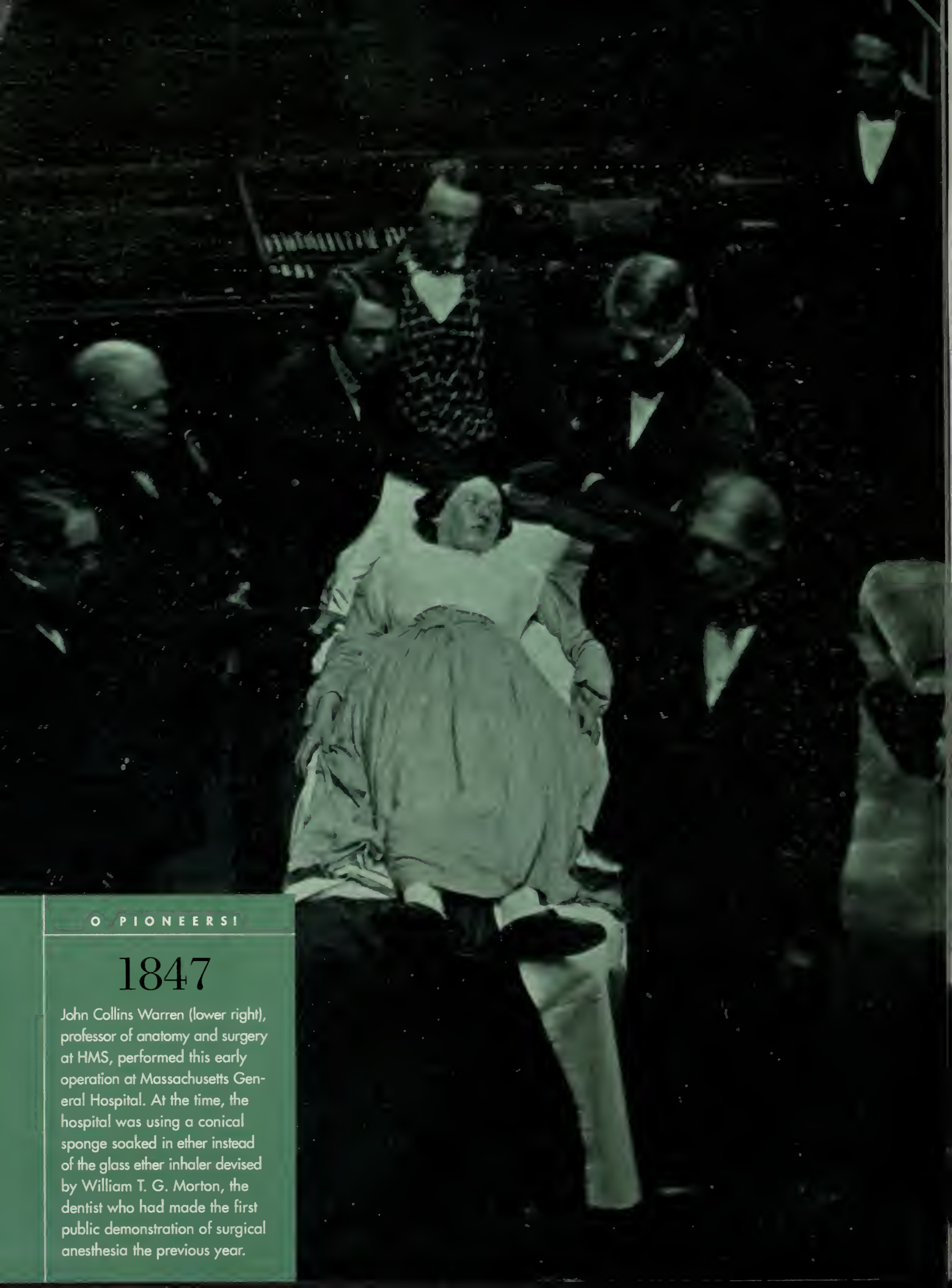
# Harvard Medical

ALUMNI BULLETIN



## ACTION HEROES

Paul Farmer urges doctors  
to pursue truth, justice,  
and the international way



O P I O N E E R S !

# 1847

John Collins Warren (lower right), professor of anatomy and surgery at HMS, performed this early operation at Massachusetts General Hospital. At the time, the hospital was using a conical sponge soaked in ether instead of the glass ether inhaler devised by William T. G. Morton, the dentist who had made the first public demonstration of surgical anesthesia the previous year.



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Cover photograph  
by Michael O'Neill

## In This Issue

**A**S THIS SUMMER WORE ON, PLACARDS ON THE PASSING BUSES IN BOSTON reminded me that a little terror is an attractive thing. They promised the ultimate experience in controlled fear: *Freddy vs. Jason* in a theater near me. I don't know how universal is the wish for a little terror, but I can recall when my daughter at an early age would ask for a story to "scare me, but not too much." For the past year and a half the federal government, with its color-coded system of warnings hovering in the yellow-to-orange range, has in its way gratified this need to be scared in measured quantities.

Indeed, the fantasy of terror (as opposed to the experience itself) has its rewards. For starters there's the sheer excitement of it, the stimulation that comes as we imagine worlds colliding, bodies invaded, apocalypse at the corner store. Next we are flooded by a reassuring sense of our own goodness. Whatever our guilty reality, as victims of terror we are washed with innocence. Then, armed with automatic purity, in fantasy we can unleash our own violent, hateful impulses either by secretly identifying with the terrorist or by retaliating in the most satisfying possible way. Finally, we are brought within a virtual circle of wagons, acquiring a sense of beleaguered community that shares and ratifies our image of righteousness.

Thus, terrorism creates two problems for us. One is the ghastly reality. The other is the mentality of anticipation, attended by heightened excitement, a sense of being on the right side of moral clarity, an urge to impulsive action if not violence, and a false sense of unity. All of these states of mind can lead to some very problematic decision making.

The speakers at Alumni Day 2003 talked about the hypothetical scenario that smallpox could become a terrorist weapon. These experts examined the potential effect of policy decisions directed to a threat not known to exist for certain, and they clarified the issues that shrank a plan to vaccinate everybody, first to a program that would target half a million health-care workers, and then to a plan that focused on relatively few, yet critical early responders.

The speakers, whose talks we must publish in abridged form because of space limitations, also highlighted an important shift in the role of public health in an age of anticipated terror and small government. Public health departments are being drawn into a key role in the system of national security, often at the cost of functions that support or advance the broader health of their communities.

Come back next year. Sequels are to be expected from the two terror industries: the real and the fantastic.

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### YANKEE SWAP

I enjoyed reading the Winter 2003 edition of the *Bulletin*. "The Reluctant Physician," the recounting of the immigration of a Boston blueblood, Doc Samuel Bartlett, to Manyberries, Alberta, struck a special chord.

My grandparents migrated from Pennsylvania to Duchess, Alberta—60 miles northwest of Manyberries—during World War I. They, too, sought the opportunity provided by the Canadian Pacific Railway to homestead in fertile prairie soil. By the time I was born in 1938, my parents had been contending with the Depression for years. My father was a dairy farmer, and we delivered milk to the villagers early in the morning, several times a week. To survive the harsh winters, we captured mink, ermine, and muskrat, and we obtained bounties on coyotes to provide additional needed income.

My aspiration to become a missionary doctor was never realized, but I do feel honored to have balanced the score—Dr. Bartlett to Alberta, Dr. Martin to Boston.

JOSEPH B. MARTIN, MD, PHD  
DEAN, HARVARD MEDICAL SCHOOL  
BOSTON, MASSACHUSETTS

### Sound Effects

I read with interest the Winter 2003 issue of the *Bulletin*, which focused on the touching of patients. On page 15, the *Bulletin* reproduces a mural by Theobald

Chartran at the Sorbonne. René Laennec is shown performing direct auscultation of a patient at the Hôpital Necker while holding his newly invented monaural stethoscope in his left hand.

The caption reads, "Tradition has it...." There is more to tradition here. Consider Laennec's words: "In 1816, I was consulted by a young woman...[Direct auscultation] being rendered inadmissible by the age and sex of the patient, I happened to recollect a simple and well-known fact of acoustics...the augmentation of sound when conveyed through certain solid bodies."

Laennec continued by describing his initial use of a rolled "quirc of paper" and the subsequent experiments he conducted to devise the best instrument, of which he provided a detailed drawing. He made a number of these instruments himself, and they were rapidly accepted as superior to direct auscultation.

THOMAS M. DANIEL '55  
CLEVELAND, OHIO

### Sensible Clues

I enjoyed your recent special report on the value of touch in clinical medicine, something rheumatologists know quite well. We often eschew instruments altogether in favor of touch, sight, and hearing when seeing patients. Would that the agencies reimbursing us regard an examination that relies on the senses as equivalent in skill and value to one that uses instruments and technology.

ARTHUR GRAYZEL '57  
MAMARONECK, NEW YORK

### Vanishing Point

I very much enjoyed the Winter 2003 issue of the *Bulletin*. It contains a number of articles that address aspects of the ideal physician/patient relationship that have almost disappeared in our current tragic medical care system. I only wish that there were some effective approach to the situation whereby we could restore viable access to so many aspects of the practice of medicine that so-called "progress" has rendered almost moribund.

GARTH K. GRAHAM '47  
WEST CHESTER, PENNSYLVANIA



## Thrill of the Chaste

Kudos on the excellent article on Joe and Arthur Sparr and their unique drugstore in the Winter 2003 issue. I have remained ever grateful to Joe for his loan, which permitted me to be properly outfitted for the beginning of our first course in physical diagnosis. The deal was sealed with a handshake—no IOU needed.

I especially enjoyed reading about Holly Smith's heroic weekly purchases of a full gross of condoms for research purposes. While this was a titillating vignette, I wonder whether most of the graduates of the past 30 to 40 years realize that the transactions between Joe and Holly were strictly illegal under then existent state law. At that time, a

statute prohibited the sale, purchase, or use (!) of contraceptives in Massachusetts, although this law was often honored in the breach. Indeed, it was even illegal for the Department of Obstetrics to lecture on the use of contraception (or abortion).

Partly because of this bizarre law and partly because of the announcement of the development of an oral contraceptive drug by HMS professor John Rock, Celso-Ramon Garcia, and Gregory PinCUS, I decided to give my Boylston Society talk in 1958 on "Contraceptives Since Antiquity." My intention was to conclude with scientific and clinical information on "the Pill." Imagine my surprise and dismay when I was permitted neither to obtain nor read the references that I requisitioned from the HMS library. Such salacious material, while available, was strictly off-limits for the likes of fourth-year students. The books were kept in a locked cabinet. How I got access to those books is another story.

Most of us, at that time, assumed that the Comstock-like ban on contraceptives in Massachusetts was the result of the effort and influence of the Catholic Church, but it actually originated as an act of neo-Puritanism. In the course of researching my Boylston paper, I learned that the laws had been enacted years earlier as a result of the lobbying of the legislature by the faculty of Wellesley College. It was stated that they were concerned that the availability of contraception would threaten the morals and virtue of their girls.

My, how times have changed.

KARL ENGELMAN '59  
HILTON HEAD ISLAND, SOUTH CAROLINA

## Oral Erudition

I'm writing to supplement Dr. Marion Mason's letter in the Spring 2003 issue of the *Bulletin* about a previous wall clock owner who had been an honorary member of the medical alumni association. The name of that individual was misspelled, understandably so because the missing letter was a silent "h." He was Kurt H. Thoma, DMD, professor of oral surgery

and Brackett Professor of Oral Pathology at the Harvard Dental School and chief of the Dental Service at Massachusetts General Hospital.

Dr. Thoma's tome was *Oral Pathology*. The title page of my 1944 second edition of it notes that it contains 1,388 illustrations; it also weighs seven pounds and is almost three inches thick. Dr. Thoma's other books include a more modestly sized *Oral and Dental Diagnosis*, whose third edition was published in 1949. He became emeritus when the Dental School was closed for several years to be resurrected as the present School of Dental Medicine.

MORTIMER LORBER, HSDM '50, HMS '52  
BETHESDA, MARYLAND

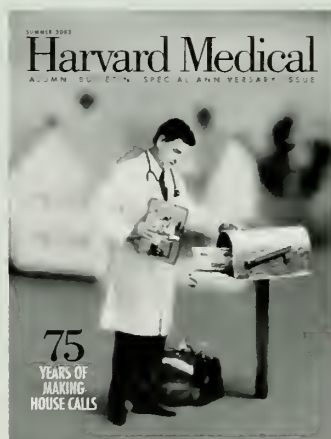
## In a Class of Their Own

Having just read the Spring 2003 issue of the *Bulletin*, which I greatly enjoyed and in which I learned a great deal about some of my friends, I felt inspired to let you know about the Class of 1939.

I have kept in close touch with this class, of which there are now 28 survivors of the original group of 131. For the past five years, we have had an annual reunion; this summer nine members of our class attended. We had an enjoyable time at the Friday morning alumni meeting, which was very stimulating, and we had a wonderful dinner that evening at the home of classmate Arthur Pier.

I take great pleasure in talking on the telephone to every surviving member of our class several times a year. We are all very loyal to HMS and, in fact, considering the limited income that most of us in our late 80s have, we have been pretty generous, with a better than 50 percent rate of participation in alumni donations.

EBEN ALEXANDER, JR. '39  
WINSTON-SALEM, NORTH CAROLINA



## GOLDEN RECEIVER

The 75th anniversary issue of the *Harvard Medical Alumni Bulletin* was recently honored with a gold medal from CASE, the Council for Advancement and Support of Education, in the periodical special issues category.

*The Bulletin welcomes letters to the editor. Please send letters by mail (Harvard Medical Alumni Bulletin, 25 Shattuck Street, Boston, Massachusetts 02115); fax (617-384-8901); or email (bulletin@hms.harvard.edu). Letters may be edited for length or clarity.*



## Residential Development

WITH SPRING COMES MATCH DAY, AND MARCH 20 FOUND HMS fourth years gathered outside the registrar's office anxiously awaiting the envelope that would tell them where they would be spending their residencies. Of the 160 fourth-years who chose a clinical program, 88 (55 percent) will enter an internship at HMS. Fifty-six percent of the graduates will remain in Massachusetts while 17 percent will go to California and 11 percent to New York City. The most popular specialties were internal medicine (26 percent), pediatrics (11 percent), radiology (10 percent), and dermatology (8 percent). The specialty that gained the most HMS graduates over last year was dermatology; family practice, general surgery, and obstetrics/gynecology all saw a decline in popularity.

### ANESTHESIOLOGY

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Massachusetts General Hospital  
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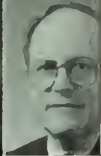
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Center



# PRESIDENT'S REPORT

## Nursing the Nursing Profession Back to Health

**I**N AN EARLIER COLUMN I HAD ASKED ALUMNI PRACTICING at hospitals across the country to look out for our graduates arriving as fledgling residents and to welcome them. I do so once again; it is an annual opportunity for you, as members of the HMS community our graduates have now entered, to be helpful to the new arrivals. Thank you for your thoughtfulness.

I recently saw projected numbers of nursing personnel for the next couple of decades and concluded that we physicians will soon have another headache to add to our woes. The anticipated shortage may relate in part to a failure of some physicians and administrators to appreciate the professionalism of nursing, thus denigrating that crucial role in the care of patients. One cannot simply substitute technicians and unskilled personnel and expect that the work of the graduate nurse will be done.

That concern led me to question whether Harvard University might consider establishing a college or program in nursing leading to a bachelor's degree or develop one that offers college graduates an advanced degree and entry into the nursing profession. True, Massachusetts General Hospital has its Institute of Health Professions, but the numbers do not approach the anticipated needs of our several teaching hospitals and other venues, including physicians' offices.

**One cannot simply substitute technicians and unskilled personnel and expect that the work of the graduate nurse will be done.**

Given that clinical research and teaching at Harvard require the presence of patients, there is wisdom, it seems to me, in appreciating the need for trained professional staff—and not only physicians—to meet those clinical and academic responsibilities. Those who doubt whether the nursing profession is worthy to be graced through connection with Harvard University might peruse *From Novice to Expert* (Prentice Hall, 2001), by Patricia Benner, professor of nursing at the University of California, San Francisco, and focus especially on her description of the several domains of professional nursing. It might be an eye-opener to you, as it was to me.

A noted economist recently opined on the present state of health care reform, "Washington is bereft of ideas." My

read of the literature confirms that our view; most of what is published nowadays seems to deal with failures of existing programs or projections of doom. It struck a colleague, John Cook, and me that it might be useful to list basic principles to guide positive change in health care financing and delivery. In an article published last November, titled "A New Approach to Medicare: Implications for Health Care Reform and for Medical Education" [*Academic Medicine* 2002;77:1069-75], we offered the following:

- Cost control is not possible without a budget.
- The budget must provide fair payment for the services covered.
- Medical care decision making should be done by physicians and their patients, based on the best scientific evidence available being applied to the care of the individual patient.
- Along with appropriate payment to care providers, there should be reasonable economic incentives to achieve budget targets, quality-of-care standards, and patient satisfaction.
- These economic incentives should be comparable across the spectrum of payers.
- For the advancement of medicine in the United States, appropriate support for medical and nursing education should be provided, and because patients of all payers benefit, all payers should participate.

What are your thoughts?

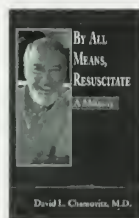
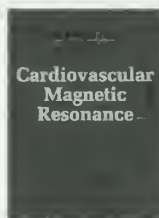
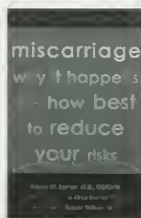
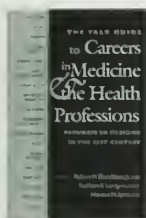
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Parting words: Warm thanks to Nora Necessian, associate dean for alumni programs and special projects, and to Daniel Federman '53,

senior dean for alumni relations and clinical teaching, for their collegueship and support of the Alumni Council, and to Dean Joseph Martin for his visionary leadership of the School and his support of alumni activities. And a generous tip of the hat to William Bennett '68, editor-in-chief, and Paula Byron, editor of the *Harvard Medical Alumni Bulletin*, for the quality of this journal. It reflects the standard of excellence to which we all strive at HMS. ■

*Mitchell T. Rabkin '55 is an Institute Scholar at the Carl J. Shapiro Institute for Education and Research at HMS and the Beth Israel Deaconess Medical Center, as well as chief executive officer emeritus of Beth Israel Hospital and CareGroup.*





## The Yale Guide to Careers in Medicine and the Health Professions

*Pathways to Medicine in the 21st Century*, edited by Robert M. Donaldson, Jr., Kathleen S. Lundgren, and Howard M. Spiro '47 (Yale University Press, 2003)

This guide explores a range of health professions—including doctoring and nursing, biomedical research and medical sociology, midwifery and medical writing—with essays written by people who have taken those career paths. More than 70 health professionals candidly discuss how and why they made their career choices.

## Everything You Never Wanted Your Kids to Know About Sex (But Were Afraid They'd Ask)

*The Secrets to Surviving Your Child's Sexual Development from Birth to the Teens*, by Justin Richardson '89 and Mark A. Schuster '87 (Crown, 2003)

The authors, one a psychiatrist and the other a pediatrician and researcher, offer a guide through the many challenges parents are likely to face in communicating with their children about sex. They outline the typical sexual maturation process of boys and girls and cover the latest research on parenting and childhood sexuality. The book includes anecdotes from parents about what worked—and what didn't work—with their children.

## Heal the Pain, Comfort the Spirit

*The Hows and Whys of Modern Pain Treatment*, by Dornce O'Hara '83 (University of Pennsylvania Press, 2002)

What happens to our bodies and minds when we encounter pain? O'Hara, an anesthesiologist and pain specialist, explains the biology of painful injury. She also explores how standard medical and physical therapies work and considers the future of pain treatment, including the contributions of alternative medicine practitioners.

## Miscarriage

*Why It Happens and How Best to Reduce Your Risks—A Doctor's Guide to the Facts*, by Henry M. Lerner '75 (Perseus Publishing, 2003)

The causes of miscarriage and the best methods for recovery are the focus of this book. The author discusses the diagnostic tests and surgical procedures available to help prevent miscarriage and offers advice on coping with the psychological effects often experienced after the loss of a pregnancy.

## Cardiovascular Magnetic Resonance

by Warren J. Manning '83 and Dudley J. Pennell (Churchill Livingstone, 2002)

This book covers the diagnosis and management of ischemic, valvular, myopathic, pericardial, aortic, and congeni-

tal heart disease. Sixty-five experts contributed to the volume, which reviews the basic principles of cardiovascular magnetic resonance imaging, discusses current techniques, and highlights areas of clinical potential.

## By All Means, Resuscitate

*A Memoir*, by David L. Chamovitz '48 (Xlibris, 2001)

The cornerstone of this memoir is the author's move to Israel at the peak of his medical career. Chamovitz practiced cardiology and nuclear medicine for 28 years and opened one of the first cardiac care units in western Pennsylvania. But in 1984, he and his wife moved to Israel, where he developed the Department of Nuclear Medicine at a 600-bed hospital near Tel Aviv and began studying Hebrew to communicate with his new patients.

## When Walking Fails

*Mobility Problems of Adults with Chronic Conditions*, by Lisa I. Iezzoni '84 (University of California Press, 2003)

The author explores the lives and challenges of American adults with mobility problems. She offers insight gleaned from interviewing more than a hundred people with walking difficulties and reflects on her own mobility problems due to multiple sclerosis. She also discusses strategies for improving mobility and dealing with the health care system.



## Gaining One's Inhibitions

**P**SYCHOLOGISTS HAVE BROODED for centuries over why some individuals seek out new people, things, and places while others shun them. Researchers have suspected that the difference between shy and outgoing people lies to some extent in their biological make-up, in particular their brains. But they have been unable to locate where those neurological roots lie. Now, a team of HMS scientists reports that the amygdala, an almond-shaped cluster of neurons buried below the prow of the brain, may provide clues to this fundamental human distinction.

Carl Schwartz and his colleagues found that adults who had been identified as having shy, inhibited temperaments when they were two years old exhibited greater amygdalar activity when shown pictures of unfamiliar faces than did adults who had been classified as uninhibited or outgoing.

The findings, which appear in the June 20 issue of *Science*, are of more than theoretical interest. Inhibited temperament is a risk factor for generalized social anxiety disorder and, indeed, a better understanding of how biological structures such as the amygdala interact with environmental factors could lead to a better understanding of the causes and treatments of this destructive psychiatric disease. "There is no way to intervene early in the life of a child to prevent suffering without understanding these developmental risk factors," says Schwartz.

An HMS assistant professor of psychiatry at Massachusetts General Hospital, Schwartz began to explore the possibility that the amygdala might play a role in temperament nearly 15 years ago while working with Jerome Kagan, the Daniel and Amy Starch Research Professor of Psychology at Harvard University. Kagan and his colleagues had shown that inhibited children exhibit striking physiolog-

ical features: their heart rate is faster and more variable; their pupils dilate more when they are solving problems; and they produce more cortisol than their uninhibited counterparts.

"The question was, what part of the brain had to be hyperactive to produce

those physiological effects?" asks Schwartz. Although the amygdala is best known for its role in emotion, it also regulates autonomic responses. Kagan and Schwartz became intrigued by the possibility that the structure might play a role in temperament. But it was years later,

**Inhibited children exhibit striking physiological features: their heart rate is faster and more variable; their pupils dilate more when they are solving problems; and they produce more cortisol than their uninhibited counterparts.**



PHOTO: LYKGI/PHOTONIE



## Wired for Sight

**S**CIENTISTS AT HMS HAVE CLEARED up some of the mystery surrounding a key structure in the developing brain that helps form the visual circuits. Their findings, which appear in the July 25 issue of *Science*, could provide new insight into brain defects.

During development, nerve cells in the eye send messages to the thalamus, which then transmits the messages to the visual cortex. This connection initially passes through a transient and seldom-studied structure called the subplate. By removing parts of the subplate in cats, the researchers have shown that it is a key component in strengthening the thalamocortical connection and in shaping cortical wiring patterns important for vision.

The subplate neurons act like scaffolding for the neural circuits, directing and strengthening important pathways before disappearing, says senior author Carla Shatz, chair of the HMS Department of Neurobiology. "You make sure all the connections in the building are really strong so the thing doesn't fall down, and then you remove the scaffolding." Once the brain is fully developed and the subplate neurons start to die, the thalamus sends its signals directly to the developing visual cortex, bypassing the dismantling subplate.

In humans, the scaffolding disappears by age two, but it is highly susceptible to damage even in the womb. The subplate neurons mature early and thus require lots of oxygen for their metabolic processes. Oxygen deprivation could harm the subplate and lead to such defects as cerebral palsy or other disabilities.

Research on subplate neurons has proven difficult in the past because the cells are located under the cerebral cortex and disappear with maturity. This did not deter Patrick Kanold, a research fellow in neurobiology at HMS and lead author of the study,



and his colleagues, who used toxins that targeted specific molecules on the subplate neurons to selectively remove parts of the structure.

The investigators examined the neural connections that originate in the lateral geniculate nucleus (LGN)—a thalamic region receiving input from the retina—and terminate in a late-developing area of the visual cortex labeled layer 4. There, highly specialized columns of cells form, which are involved in analyzing visual stimuli. Nobel Prize-winning work by David Hubel and Torsten Wiesel at HMS demonstrated that the thalamic connections to the nerve cells in the cortex help form these columns, which analyze such visual features as vertical and horizontal orientation.

By removing the subplates from immature cats, the group has shown that not only is the structure involved in strengthening the signal from the LGN to the layer 4 neurons, but without it, the distinctive ocular dominance and orientation columns do not form.

"Taking out the subplate arrests cortical development," says Kanold, who showed that neurons in the visual cortex with a disrupted subplate could not distinguish light bars of different orientations—whether the lines were vertical, horizontal, or at an angle. This was a clear indication that their orientation columns had not formed properly. He also showed that the signals between the LGN and the layer 4 neurons were much weaker in brains with missing subplate neurons. ■

*Gaia Remerowski is a former intern at Focus.*

after becoming trained in functional magnetic resonance techniques, that Schwartz would have a chance to explore the idea along with Kagan and colleagues.

While their findings appear to add another feather to the amygdala's hat, they raise questions about its old image as a master of emotion. For example, this nerve cell cluster is often associated with the fear response. Yet the unfamiliar faces shown to Schwartz's subjects were neutral, not threatening. He thinks that the amygdala's real function may be to detect new and ambiguous stimuli and that fearful stimuli might fall into that broader category. "A wider role for the amygdala," he says, "could be that it is involved in the detection of novelty and ambiguity."

He and his colleagues made yet another pot-stirring discovery, one that could have implications for the diagnosis and treatment of generalized social anxiety. As it turned out, two of the inhibited subjects in the study were diagnosed with the disorder. Yet they displayed the same pattern of amygdalar activity as the inhibited subjects who did not have a psychiatric diagnosis.

"If I had started with people with anxiety disorder, we would have found a difference in the amygdala," Schwartz says. "I might have gone on to say this is a marker for the disease. Wrong—this is a marker for the risk factor of inhibited temperament."

Schwartz believes the rush to discover new drug targets could lead some to confuse disease markers with risk factors, not just in the case of social phobias but in other psychiatric disorders. "If nature is being that subtle in this case—well, she is usually kind of consistent in that way." ■

*Misia Landau is the senior science writer for Focus.*



ACTION

HEROES





CLASS DAY 2003



**PAUL FARMER** urges graduates to pursue truth, justice,  
and the international way

PHOTO: MARGARET HENNING

OST OF YOU YOUNG DOCTORS smiled knowingly when you looked at your programs and noted the title of my speech, "If You Take the Red Pill." If my research is sound, most of you know that I am talking about neither a vitamin nor the stool softener Colace. It

was a Harvard librarian, in fact, who showed me data suggesting that fully 94.2 percent of you have seen *The Matrix*. A word to those unfamiliar with my reference to *The Matrix*: It's an action film starring that great thespian Keanu Reeves. The plot is murky but not uninteresting:

Reeves's character is a cog in the great wheel of industry and finance, just another programmer working in front of a computer screen in a gray cubicle. Mr. Anderson, as he is called, knows something is wrong with the world but doesn't know what it is. It's "like a splinter in his mind." There's got to be more to life than this, he's certain. He feels most alive under an alias, his hacker name, Neo. To make a convoluted story short, a certain Morpheus, someone the company drones and police term a terrorist, contacts Neo. (Morpheus is played in completely over-the-top fashion by Laurence Fishburne.) If Neo wants to find out what's bugging him—all the mediocrity and meaninglessness of life in the machine—then Morpheus will be only too happy to show him. You have to admit that the plot line is a good one. And relevant to the world we inhabit.

Morpheus gives Neo two options: he can choose to see the world as it really is, or he can chicken out. Morpheus outlines Neo's choice with all the subtlety of a mediocre Shakespearean actor who's had a few too many vodka tonics. He pulls a pillbox out of his stylin' leather coat. He proffers a red pill and a blue pill (and no, this is not the blue pill of interest to our senior faculty and to Pfizer stockholders). And he says something like this: "You take the blue pill, the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill, you remain in Wonderland and I show you how deep the rabbit hole goes."

Like any good action hero with a splinter in his mind, Neo chooses to go for truth, which is all that Morpheus has promised. And the truth is ugly. It's that Neo, and indeed everyone he's ever known, is a slave. Never mind, just now, what the mechanism of their enslavement is. I don't want to spoil the surprise for the seven of you who haven't seen the movie. The message is clear: Neo's been duped, deluded by job security and superficial comforts like cool club music and hip garb. It's all fake.

It's my contention, of course, that a certain amount of red-pill popping is just what we need in medicine and public health. But how many of us want to see how deep the rabbit hole goes?

Do we dare to take the red pill? I pose this to you as a serious question from a guy who is gagging on the red pill and still falling down the rabbit hole. As a character in the

film—a bad guy, of course—says, "Ignorance is bliss."

But ignorance is not bliss. Ignorance is just that—ignorance—and ignorance and medicine are simply incompatible. And so our own red pill may well be more bitter than any other, because it's easy to argue that, for doctors as for scientists, the blue pill is an unacceptable option, even if it's what most of us have swallowed.

Gagging, I just said. Still falling. How so? To be here today, I traveled from rural Haiti to Boston via Moscow. And tomorrow I'm headed to Rwanda via Knoxville, Tennessee; it's not a direct flight. Then back to Haiti, and after ten days, back to Africa. You've all heard of the New York shuttle. Well, I've been taking the Harvard-Haiti shuttle for 20 years, and I can tell you, it gets old. One starts hoping to come across a blue pill in those paltry bags of airplane peanuts, which currently constitute 32 percent of my dietary intake.

What's all this frenetic travel about? It's about the red pill. Honest. It's not that taking the truth pill leads you to board international flights. It's rather that if you take it and you're a doctor, you see that there's unnecessary sickness and suffering everywhere on this planet. You see, too, that certain epidemics are completely out of control and that each of the places I've just mentioned has horrific health emergencies. You see that some people are denied access to the most basic fruits of science, to the tools developed over the past few decades as medicine itself became "the youngest science."

Ignorance is not bliss. Ignorance is just that—ignorance—



I'm an infectious disease doc, so of course I'm going to talk about epidemics. You think SARS is bad, and it is. But allow me to put this latest epidemic in perspective. As of today, although fewer than a thousand people have died of SARS, several Fortune 500 companies are scrambling to put together a global SARS fund; I'm told that more than a hundred million dollars have been pledged. I just read that certain airports in Asia have installed thermal scanners to identify febrile travelers. All this in the space of a couple months. All good.

But every day more than 8,000 people die of AIDS, the leading infectious cause of death in the modern world. And many more die of tuberculosis and malaria: during the course of this year, six million people, most of them children and young adults, will die of these three diseases alone. Six million deaths, almost all of them preventable with modern medicine, but the red pill reminds us that we have no plan in place to serve those most in need. And even the newspapers, whose editors and publishers seem to subsist on a steady diet of blue pills, report that the Global Fund to Fight AIDS,

Tuberculosis and Malaria will soon run out of money. The plagues of the poor don't seem to interest industry, the press, or even basic science.

And so it is everywhere. Take the red pill and suddenly you see that more than 40 million Americans have no health insurance and as many more are poorly insured. Take the red pill and you see that the bottom billion of this planet don't have enough food or clean water while in other places, including this country, we are called to subsidize agribusiness and then destroy excess crops or dump them on faltering peasant economies. Take the red pill and you wonder why it is that, in the global era of connectivity, millions die of hunger while others battle obesity. You learn that some companies short-date perfectly good medications and equipment in a process known as planned obsolescence while tens of millions will die without ever having benefited from the discoveries of Salk or Sabin or even Pasteur.

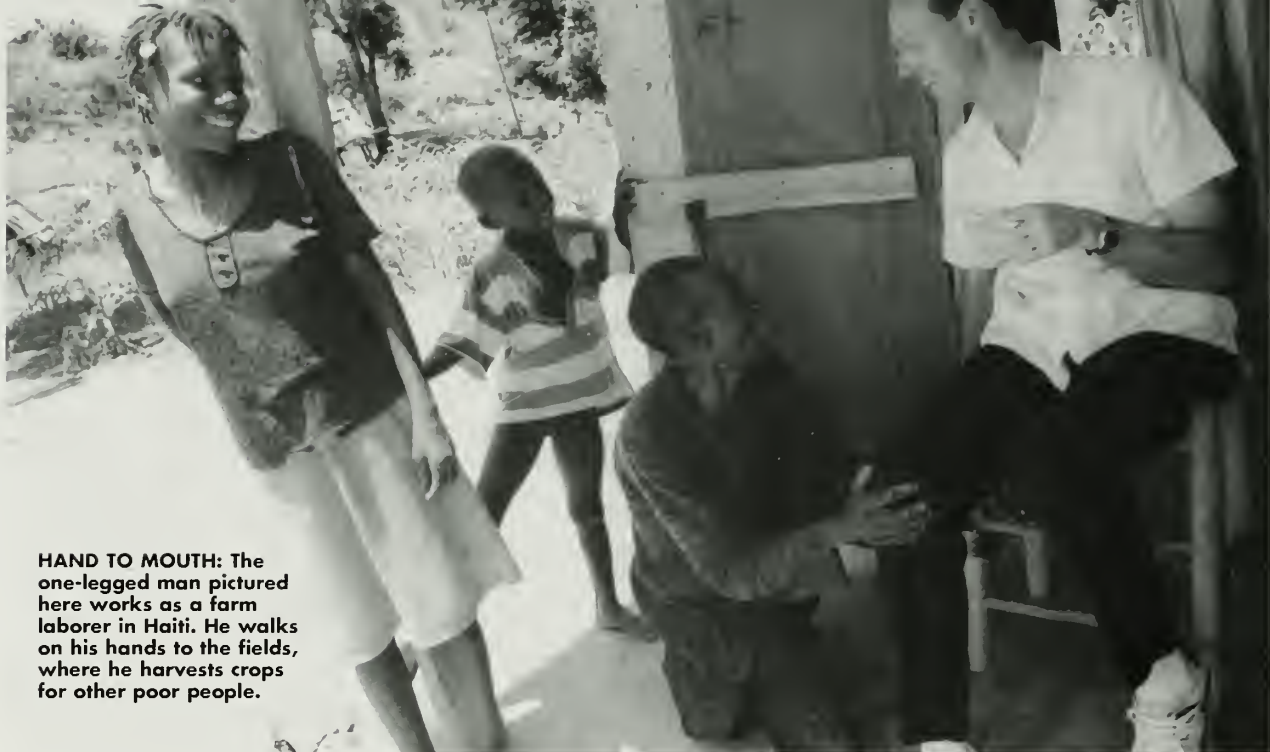
This has been going on for some time in the desert of the real, and it's getting worse. But here's a glass half-full for you:



**CENTENNIAL CONTENDER:** At a community clinic in central Haiti, Paul Farmer cares for a patient who is more than 100 years old, a rare milestone in that impoverished nation.

PHOTO: MARK COHEN/REUTERS

and ignorance and medicine are simply incompatible.



**HAND TO MOUTH:** The one-legged man pictured here works as a farm laborer in Haiti. He walks on his hands to the fields, where he harvests crops for other poor people.

doctors are granted special license to fight for a better world. Sure, it's utopian, but it's also feasible. We can carp about health insurance in a way that politicians cannot, because we are merely fighting for our patients. We can gripe about drug prices in a way that others cannot, for the same reason. We can even deliver red-pill speeches like this one without being considered pills ourselves.

Because this is what we're called to do: to fight for the survival and the dignity of our patients, especially the sickest and most vulnerable. You don't have to travel far to meet people who receive substandard care. Some of you have worked with my own group, Partners in Health, in a neighborhood less than a mile from here. But you've already learned, if you've taken the red pill, that it's *after* the patients leave the hospital that many of them have trouble—trouble understanding or following doctors' orders. Trouble filling prescriptions. Trouble getting to clinic appointments. Trouble paying rent or utility bills.

You could address some of these troubles yourselves. Say you're an orthopedics resident and on the way from the hospital to the gym, you pop by to see the lady who fell and fractured her femoral neck. You helped to put in the hardware and all went splendidly, as you noted in your (very) brief op note. But she lives on the fifth floor of a run-down public housing building not a mile from the medical mecca in which you train. And the elevator's out. If you'd taken the blue pill, you wouldn't even know this fact, because she lives in the desert of the real—invisible, it would seem, to most doctors.

Let's bring this back to earth, some of you may be thinking. You're worrying instead about internship and beyond. The hours are too long, and being a doctor can be hard at three in the morning. But surely it's not as hard as being a patient. How hard is it, really, to be a practitioner of modern biomedicine? On all these planes I take around the world, I see the captains of industry looking very industrious. I'm usually reading *People* magazine and they're reviewing their spreadsheets. Do you think, really, that we work all that much harder than bankers or stockbrokers? I'm not convinced, frankly.

Rather, it's what we do that is so radically different. Whether internist or pediatrician or pathologist or cardiac surgeon, we are working for others. It's not about us, or our incomes, or our sense of personal efficacy. It's about what happens to our patients. Or, for those of you who are scientists, it's about the knowledge you create that can help heal a wounded world.

After a few 80-hour work weeks, you may have moments when you want to take the blue pill. Don't do it. Wonderful things are happening in clinical medicine and the allied sciences, in large part because of medicine's embrace of science. The yield of this embrace has been nothing short of miraculous. From pathology to oncology to infectious disease, the revolution continues.

But for those who take the red pill, we're obliged to see the dark side of progress. More and better discoveries, every day, but an erosion in our ability to use them wisely and equitably. More capacity to engineer new therapies but a lack of commitment to directing our efforts toward the world's great

This is what we're called to do: to fight for the survival



killers. In my field, there have been many victories, certainly. But there hasn't been a new class of anti tuberculosis drug discovered in decades. There are no effective vaccines for AIDS, tuberculosis, or malaria—the big three modern plagues.

Visits to the lifeworlds of the sick help show us that we're failures in the equity department. These visits help us understand why excellent in hospital care can come to naught if we don't have an equity plan. They help us understand why prescriptions go unfilled, why appointments are missed, why medications are taken incorrectly or not at all. These visits connect us to people whose lives are very different from our own. And this failure, which you can see for yourselves during residency, is emblematic of the even more shocking failures you can see when you leave behind nationality, a blue pill side effect, and take on the globe's medical problems.

This brings me to a different, more personal part of my message. If you've agreed with me so far, then you'll see the vast promise of modern medicine and also the dismal situation of our global village: more and more for fewer and fewer. It's true in so many realms, but it's excruciatingly so in medicine and public health. Martin Luther King, Jr., once said: "Of all the forms of inequality, injustice in health is the most shocking and the most inhumane."

Taking the red pill is scary. There are those of you who have popped the red pill but are now reaching for the ippecac. And who wouldn't? We live in a world of medical haves and have-nots, a world in which most of the bottom billion have no modern medical care at all, a world in which current trends promise that the situation will only get worse during the early years of your medical practice.

What are the boundaries of your world? Next year, the limits of your world will shrink to a hospital or two, and all you'll want to do when you leave the hospital will be to watch an action film yourself. Or listen to some music. Or do whatever it is that transports you out of the desert of the real. But in your heart, and in your practice, you know that most of the boundaries are ones we create ourselves. They are boundaries we erect in order to lessen our pain, not the pain of others.

No other crop of young doctors will ever have the latitude and influence you will; no others have yet had the technology. In an essay every American should read, William Finnegan recently wrote in *Harper's Magazine* that "...every overweening, remorseless projection of American power, every unfair trade rule and economic double standard jammed into the global financial architecture, helps erode the legitimacy of American ascendancy in the eyes of the world's poor. This erosion is occurring throughout Latin America, Africa, Asia."

I live and work in these places and I know Finnegan is right. The future of medicine is also jammed into this global financial architecture. It's why Partners in Health has had to fight tooth and nail to use the tools of modern biomedicine among the destitute sick in Haiti, since they do not constitute "a market." It's why we develop thermal sensors for Asian business commuters while another febrile continent's rigors go uncharted.

Taking the red pill and seeing the world of the sick as it is today—today being the global era of scientific medicine—leads us to painful choices. I'm not seeking to be Manichean: the choices before you are not between good and bad. They're between doing good and doing better.

To do better, don't we have to take that red pill and fight? Your generation will have to answer that question. Because unfortunately, as Morpheus says, you and I have run out of time. Of course, the clock isn't really ticking on us. It's ticking on others. Again—how many people have died of treatable diseases during the time it took for me to give this talk? Especially on that febrile continent to which I return tomorrow?

Allow me to leave you with two "take home messages," as we say at HMS. First, apply the Golden Rule in your practice—especially during that last admission, in the wee hours of the morning. Or to a particularly difficult or crabby patient. Could you ever care as much about her as you do about, say, your own mother? Could you ever love someone as much as you love yourself or your own child? The answer to these questions may well be certainly not, but at least the red pill pushes us to ask the question.

Second, make home visits now and again. Don't buy the received wisdom about respecting boundaries. What's wrong with helping housebound patients wash their dishes? Or helping hutbound patients transform dirt floors into cement floors? Break down boundaries. Think outside the box. Do you want to wake up someday and discover that your life has become dim, without color? That you took the blue pill? Even though your ectopic soul, stowed away, say, in your left axilla, forgotten and neglected, was exhorting you all along to make the leap, to take a chance?

You know the questions. The answer is out there, and you will find it if you want to.


Now you know. And knowing, as another action figure—G.I. Joe—was fond of noting, is half the battle. ■

*Paul Farmer '90, the Maude and Lillian Presley Professor of Social Medicine at HMS, is also executive vice president of Partners in Health.*

and the dignity of our sickest and most vulnerable patients.

# SOUL SURVIVOR

by WARREN KINGHORN

CENTRAL TO THE MOVIE *DEAD POETS SOCIETY* IS a character named Neil Perry, a promising student caught between his passion for theater and a domineering father's rejection of his acting dreams. In the climactic scene right after Neil has starred in "A Midsummer Night's Dream" and just before he commits suicide, his father threatens to remove him from school, adding, "We're not going to let you ruin your life! You're going to Harvard and you're going to be a doctor." Those words have haunted me; after all, I came to Harvard explicitly to become a doctor.

I suspect that the screenwriter of *Dead Poets Society* chose medicine and Harvard for that line because they represented for him, as for many, the confluence of one of our nation's most respected professions with one of our nation's most prestigious schools. As we now graduate from Harvard as doctors, that is the mantle we inherit.

It would be easy for us to celebrate this fact blithely, to soak in the congratulations of others, to bask, however briefly, in the spotlight of status. But to do so would ignore the truth that for Neil Perry, as perhaps for many of us, Harvard and medicine would have been not a blessing but a curse, not freedom but imprisonment: imprisonment by the expectations of others,

imprisonment by status and prestige and success, imprisonment inside market-driven selves that we only think we choose.

To paraphrase the character of Mr. Keating in *Dead Poets Society*: business, medicine, and law may help us to sustain life, but what is it that we stay alive for? Is medicine to be both the means and the end of our existence? Are our lives' meanings tied up in securing prestigious residencies and fellowships, winning the admiration of colleagues, publishing important papers, gaining tenure at places like Harvard, or achieving a certain lifestyle or image? If so, are our patients means to those ends? If our lives revolve around our patients, do all others—our spouses and partners, our children, our friends and families—become secondary? Do our patients really benefit when we sacrifice all else for them?

In answering these questions, we must face some controversial but disturbing find-

ings. Seventy-six percent of surveyed residents in a recent *Annals of Internal Medicine* study met criteria for "burnout," which was correlated with five self-reported suboptimal patient care practices. Suicide is a leading cause of preventable death among young physicians. Physicians' marriages are often marked by a "psychology of postponement" in which couples believe that time, leisure, and intimacy will come at the never-realized next stage of the doctor's career. What is it, we must ask, about our healing profession—and about ourselves—that makes us vulnerable to such unhealthiness?

The fact that we graduate from Harvard as doctors only magnifies the decisions we now face. Harvard has given us

Business, medicine, and law may help us sustain life,



## A young physician ponders the definition of success and the pressures on doctors outside the walls of Harvard Medical School

tremendous opportunity; but opportunity and freedom are not the same thing. We have all been earmarked for success; today we run at the head of the academic pack, poised to extend our lead into the future. But being at the front brings with it an extraordinary pressure to stay there. We have the freedom at Harvard to achieve success, but do we have the freedom not to? Can we redefine or even reject Harvard's conceptions of success?

I hope that in our opportunity we will find freedom, and that our lives will model the healing that we will work so diligently to bring to our patients. We have worked hard to get here, and our celebration is justified. But in our celebration, let's remember that Harvard is great but impermanent and that our medical victories will be spectacular but only temporary. Let's therefore set our delight instead on those things that gleam so brightly that they render Harvard and medicine dull by comparison: the love of others, the beauty in others and in nature, perhaps even the love of God. For the ancient question still remains: what does it profit any of us if we gain the whole world and yet lose our very souls? ■

*Warren Kinghorn '03, who holds a master's degree in theological studies, is undertaking a residency in psychiatry and internal medicine at Duke University Medical Center.*



out what is it that we stay alive for? —MR. KEATING, DEAD POETS SOCIETY

# THE SNOOZE

by RAHUL SAKHUJA

**I**N TRYING TO COME UP WITH SOMETHING PROFOUND to say, I read previous graduation speeches, which commented on Harvard as the gateway to greatness or Harvard as an elevator to the upper echelons of society. And I realized that past speakers had missed a unique feature—that is, Harvard as the snooze button on life. Think about it: four, five, or fourscore years ago (if you got a doctorate too), we all faced the same option. We could continue in the real world or we could hit that snooze button on life...and go to graduate school. In fact, some of you—you shall remain nameless for the

sake of any future patients in the audience—took this analogy quite seriously, napping away your first two years.

As in any fitful snooze, we often awaken with vivid memories. Permit me to share a few with you. The setting is the first day of our Patient/Doctor course and my first time seeing a patient while wearing a white coat. We head off down the hospital corridors, with our preceptor leading the way. We have a set of twins—Ryan and Brian—in our class and one of the twins is by my side. A month into school and I'm still not sure which twin he is, so I muffle his name: "M ryan...hey!" I am armed with questions about quality, radiation, severity.

I enter the room and begin. "Sir, I am a medical student. May I ask you some questions about what brought you to the hospital?" "No!" he snaps. I am stunned; it was actually a rhetorical question. My teachers had told me that I was good enough and smart enough. But, apparently, patients didn't like me. I had already failed.

Another story, in a different setting—Guatemala, a couple of summers ago. I was sitting in the sunshine on the sidelines of a dirt soccer field, talking with Maria. A community activist, Maria was a local hero. Her husband had abandoned her when she was pregnant with Juan. After giving birth, she became violently ill and was diagnosed with HIV. But she received a second chance—she recovered. Then her worst nightmare came true: her son became ill. He, too, had HIV. I remember Maria saying, "Our people can't handle this; the virus is too strong."

Yet Maria began working with a group of women to bring treatment to the community. Through her work, she saw a light in people's eyes, one that some never witness. Maria died recently. But, before she died, she said: "I lied. Our people *can* handle this but, right now, I no longer can. The virus is too strong."

Now, our nine minutes are up. The snooze is over. Okay, okay—for those of you going into ophthalmology or dermatology or radiology, you have another nine minutes. As for the rest of us, we are waking up.

If you thought it was hard getting up for nutrition class, try waking up to life. The concerns are much greater—global

As in any fitful snooze, we often awaken with vivid



# BUTTON

An HMS graduate receives a wake-up call to his new life as a doctor

HIV, medical errors, no access to health insurance. And, yes, I am nervous. Before, when we failed, there was not much at stake; now, when we fail, we risk human lives.

In the Patient/Doctor One course, I failed. My patient didn't even let me into the room. But I watched Aimee take a history and I watched whichever twin that was take one as well. With their help, I learned to help patients. As part of this group, I achieved what I could not have accomplished alone. When Maria reflected on the impact of AIDS on her community, she, too, thought she would fail. And while she did not survive individually, by joining with others she was able to tackle difficult problems in an enduring manner.

While the problems and responsibilities that we face are much greater than those of the Patient/Doctor course, the group we are about to join—doctors, dentists, and scientists—is much bigger and more powerful.

I look around today, and I am less nervous. When I am sick, I want this group around. When tough problems loom over me, I want this group around. It's been a wonderful snooze. I, for one, am glad that I had you all by my side. It has been a privilege to learn with you—and from you. It will be a privilege to lead alongside you. It is inspiring to wake up to this new life as a part of this group. ■

*Rahul Sakhuja '03 is undertaking an internal medicine residency at Massachusetts General Hospital.*



memories. —RAHUL SAKHUJA

# HMS PRIZES &



## Dean

Today, you stand before family, friends, teachers, and colleagues, ready to become physicians and dentists. For two thousand five hundred years, since the time of Hippocrates, doctors have taken an oath to affirm a commitment to their profession. This oath has served as both a tribute to their teachers and as a contract with their community. In this spirit, the Class of 2003 has created an oath that draws upon elements of oaths both recent and ancient. I now invite you, as a class, to share in this tradition and to articulate the ideals and principles that will guide you in the years ahead.

The following medical degree recipients graduated with honors or special awards:

**Ramy Amin Arnaout**, cum laude  
*The Immunity Hypothesis: An Alternative Explanation for the Dynamics of the Biphasic Decay in Viral Load in HAART-Treated HIV-1 Infected Individuals*

**Otter Quaking Aspen**  
National Medical Fellowships 2003  
Ralph W. Ellison Memorial Prize for outstanding academic performance, leadership, and social consciousness

**Otter Quaking Aspen, Teran Wilson Colen, Jennifer Yu-Fe Lin, Chiadi Ericson Ndumele, and Kerri Akaya Smith**  
The Multiculturalism Award to the senior in each Academic Society who has done the most to exemplify and/or promote the spirit and practice of multiculturalism and diversity

**Michelle Faith Benger-Merrill**  
Bemy Jelin '91 Prize to that senior who most demonstrates overall academic

## Class

Upon my honor, by all that I hold most sacred, I pledge myself to the service of humanity.

### To my Patients:

I vow to care for those in need and strive to alleviate suffering.  
I will honor and protect the confidences entrusted to me.  
I will recognize the importance of religious and spiritual beliefs in the context of health.  
I will empower my patients to make sound decisions for their health and well-being.  
I will respect my patients' dignity and autonomy, both in living and in dying.

### To my Community:

I embrace my duty to society.  
I will work to promote health and prevent disease.  
I will support efforts to extend health care access to everyone.  
I will address the social and environmental problems that impact the health of my patients.  
I will not use my skills contrary to the laws of humanity, even under duress.

### To my Colleagues:

I promise to maintain the integrity and noble traditions of my profession.  
I will honor, with respect and gratitude, all who teach me this art.  
I will work in diligent and honest collaboration with my fellow practitioners to uphold the highest standards of patient care.  
I will teach and advance the art and science of medicine with kindness and purpose.  
I will practice my profession with honesty, dignity, and compassion.

### To Myself:

I commit myself to the pursuit of knowledge and to a lifetime of learning.  
I will acknowledge my limitations and mistakes so that I may learn from them.  
I will keep watch that my ambition and curiosity serve my patients and not my ego.  
I will maintain my own health and well-being, and the well-being of those close to me, so that I may uphold these responsibilities.  
I will ensure that, above all, the health of my patients is my first concern.

Today, with the support of family and friends, peers and mentors, I pledge to fulfill this oath to the best of my ability and judgment, as I dedicate myself to the art and practice of medicine.



# AWARDS



excellence with a career interest in pediatrics, oncology, international health, or psychiatry; the Arnold P. Gold Foundation Humanism in Medicine Award to a graduating medical student who consistently demonstrates compassion and empathy in the delivery of care to patients

**Andrew Ernest Bennett,** magna cum laude  
Leon Reznick Memorial Prize for excellence and accomplishment in research: *Broadband Adiabatic Mixing and the Structure of the SH3 Domain in CD2BP1 by Solution NMR Spectroscopy*

**Aimee Marie Crago,** cum laude  
VEGF Is on Autocrine Survival Factor for Metastatic Carcinoma Cells

**Jason Alexander Efstathiou,** cum laude  
Novel Approaches for the Treatment of Endometriosis in a Murine Model

**Anna Flattau**  
Robert H. Ebert Primary Care Achievement Award for excellence and outstanding accomplishments in the field of primary care medicine

**Amy Marie Gillis,** cum laude  
Magnetic Resonance Imaging of Glycosaminoglycan Distribution in Cortilage (dGEMRIC): Verification of Biophysical Basis and Clinical Studies

**Soro Noomi Goldhaber-Fiebert**  
Rose Seegal Prize for the best paper on the relation of the medical profession to the community: *Randomized Controlled Community-Based Nutrition and Exercise Intervention Improves Glycemia and Cardiovascular Risk Factors in Type 2 Diabetic Patients in Rural Costa Rica*

**Mory Elizabeth Gordon**  
Henry Asbury Christian Award for notable scholarship in studies or research: *The Contribution of Nitric Oxide to Exercise Hyperemia in the Human Forearm*; the New England Pediatric Society Prize to the senior who in the opinion of peers and faculty best exemplifies those qualities one looks for in a pediatrician

**Heather Lyn Hinds**  
Dr. Sirgoy Sanger Award for excellence and accomplishment in research, clinical investigation, or scholarship in psychiatry: (1) *Essential Function of  $\alpha$ -CoMKII in Neurotransmitter Release at a Glutamatergic Central Synapse* and (2) *CA1 Long-Term*

*Potentiation Is Diminished but Present in Hippocampal Slices from  $\alpha$ -CoMKII Mutant Mice*

**Karen Jaan Ha**  
Richard C. Cobot Prize for the best paper on medical education or medical history: *Bacteriophage Therapy for Bacterial Infections: Rekindling a Memory from the Pre-Antibiotics Era*

**Melady Yen Hou,** cum laude  
Molecular Mechanisms of FSH Beta Gene Regulation by GnRH

**Leand Iziksan,** magna cum laude  
Chemokine Control of Th1-Mediated Autoimmune Disease

**Maurice Vernan Jeter, Jr.**  
Society for Academic Emergency Medicine Excellence in Emergency Medicine Award to a senior medical student who has demonstrated excellence in the specialty of emergency medicine

**John Curtis LoMottino**  
Kurt Isselbacher Prize to the senior demonstrating humanitarian values and dedication to science

**Benjamin Leoder**  
Harold Lomport Biomedical Research Prize for the best paper reporting original research in the biomedical sciences: *Formin-2, Polyploidy, Hypofertility and Positioning of the Meiotic Spindle in Mouse Oocytes*

**Michelle Ann Lee**  
James Tolbert Shipley Prize for excellence and accomplishment in research: (1) *Endogenous Patterns of TGF $\beta$  Superfamily Signaling During Early Xenopus Development* and (2) *Timing of Endogenous Activin-Like Signals and Regional Specification of the Xenopus Embryo*

**Percy Po-Yih Lee,** magna cum laude  
The Role of Neuropilin-1 in Tumor and Developmental Angiogenesis

**Wilsan Jae Liao,** magna cum laude  
Arroy Comparative Genomic Hybridization of Metastatic Melanoma Detects Gene Copy Number Changes and May Provide a Model to Predict Response to IL-2 Immunotherapy

**Jennifer Yu-Fe Lin,** cum laude  
SV40 Large T Antigen-Mediated Dephosphorylation of p130, a Retinoblastoma Family Protein

**Emanuel M. Maverakis,** summa cum laude  
Determinant Hierarchies, Immunologic Tolerance and Exhaustion, Molecular Mimicry, T Cell Competition, Public and Private Determinants, and Their Role in Autoimmune Susceptibility and Disease Progression

**John Michael McWilliams,** magna cum laude  
Use of Basic Clinical Services and Mortality Among Uninsured Near-Elderly Adults

**Megan Macklin Maare,** cum laude  
Perinatal Predictors of Atopic Dermatitis Occurring in the First Six Months of Life

**Chiadi Ericson Ndumele,** cum laude  
Differences in the Characteristics, Treatment and Outcomes of Trial and Non-Trial Patients Receiving Thrombolytic Therapy After Acute Myocardial Infarction

**Rohul Sokhujo**  
The Gerold S. Foster Award in recognition of contributions to the student body by virtue of serving on a student-faculty committee including but not limited to the Committee on Admission

**Jenny Ying Xin Sun,** cum laude  
Transcriptional Control of the IL-13 Gene in CD4<sup>+</sup> T Cells

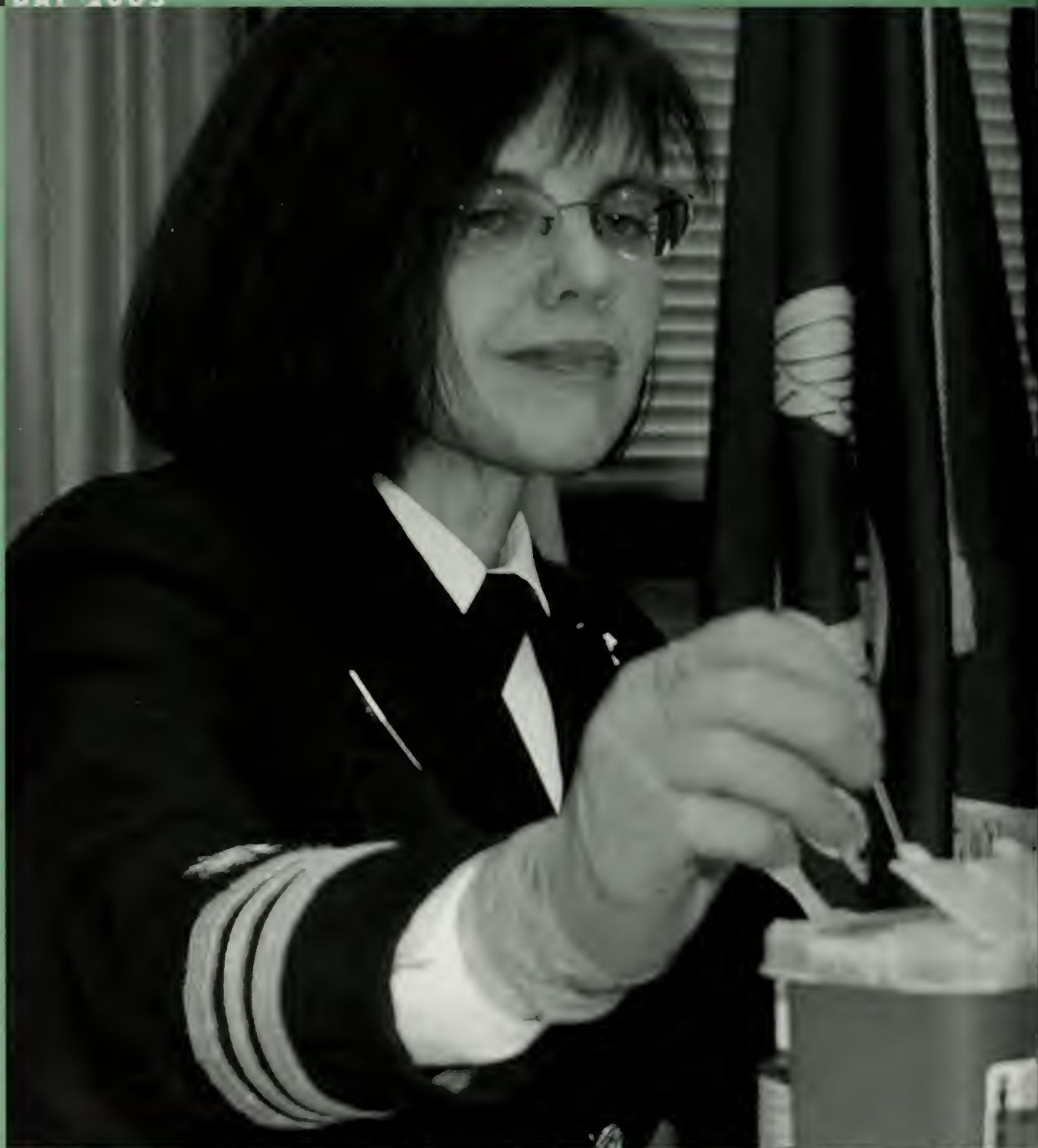
**Andy Tsoi,** cum laude  
Coupled Multi-Shape Model for Medical Image Segmentation: A General Framework Utilizing Region Statistics, Edge Information, and Information-Theoretic Criteria

**David Allen Walton**  
The Community Service Award to the senior who has done the most to exemplify and/or promote the spirit and practice of community service

**Janathon Daniel Wosserman,** cum laude  
The Role of FOXO Proteins in Transduction of Insulin Receptor Signaling and Mediation of Cell Growth and Survival



ALUMNI DAY 2003



# TRUTH OR

Physicians weigh in on the risks of action—and inaction—in the smallpox vaccination debate





by COURTNEY HUMPHRIES

SMALLPOX IMMUNIZATION HAS A HISTORY of controversy, especially in Boston. In the 1720s, Cotton Mather and Zabdiel Boylston were the targets of threats and ridicule when they tried to introduce a new method of inoculation to the colonies. In 1901, Boston's last outbreak of smallpox prompted a door-to-door vaccination campaign that sparked protest and charges that public health officials were attacking civil liberties by forcibly vaccinating the poor. One hundred years later, the threat of bioterrorism has spurred a new vaccination campaign and similar ambivalence on the part of the public and the medical community alike. The 2003 Alumni Day symposium, "Smallpox: Proxy and Probe,"

**PHYSICIAN, STEEL THYSELF:** U.S. Senate Majority Leader Bill Frist '78 received his smallpox vaccination in March 2003. A transplant surgeon, Frist also underwent training to administer the vaccine in the event of an outbreak.

SCARE

demonstrated how the recent smallpox scare has dredged up old controversies over civil liberties, public health, and resource allocation.

As director of Georgia's Division of Public Health, Kathleen Toomey '78 has witnessed firsthand how the 2001 attacks changed public health in the United States. The threat of bioterrorism has brought medical and public health professionals into a new role as first responders to terrorism. The decision to vaccinate them for smallpox this year was largely based on the vaccine's availability, Toomey said, rather than on evidence that the virus would actually be used as a bioweapon.

The arguments that officials like Toomey have faced from the public are familiar in the history of smallpox in the United States, noted Allan Brandt, the Amalie Moses Kass Professor of the History of Medicine at HMS. Boston's controversial vaccination campaign at the beginning of the 1900s led to "what may be the most important public health litigation," Brandt said, the case of *Jacobsen v. Massachusetts*, in which the court determined that there is a limit on individual rights when it comes to public health efforts for the common good, such as mandatory vaccination. But the increased power of the state to act in the interests of



# PREPARING FOR

# S

by KATHLEEN TOOMEY

SINCE THE EVENTS OF SEPTEMBER 11, 2001, AND the anthrax attacks that followed, national concerns about the potential for other bioterrorism threats have highlighted the role of public health as a fundamental component of our public safety and national homeland security systems. For much of the past 18 months, in fact, nearly 90 percent of

my time as a state health officer has been devoted to activities related to emergency preparedness and bioterrorism response, with the past few months largely focused on our state smallpox initiative.

The anthrax attacks are the only examples of bioterrorism that many people know. Yet those letters, with their alerting messages and visible powder, were anomalous compared with nearly any other conceivable bioterrorism scenario. Unlike other terrorist acts, a bioterrorist attack likely will not have a single focus or an identified location that is the "site" of the attack. Instead, recognition of bioterrorism will occur as it does for other, naturally occurring diseases or outbreaks. A patient with a specific disease or unusual constellation

of symptoms will be reported to public health officials by a clinician, and public health staff will carry out an investigation. The initial case of anthrax in Florida was identified in just that manner—recognized and reported by an astute clinician who communicated to his local public health department and triggered the notifiable diseases surveillance and response systems.

Since the time of the anthrax investigations, much has been written in the popular press about the perilous state of the nation's neglected public health infrastructure. But labeling the activities

that reflect this interaction between public health and the medical community as the "public health infrastructure" is misleading. Public health cannot work in isolation from the broader medical community, and the success of our bioterrorism response will depend on the vital interaction between public health and the medical care system.

Several years ago in Georgia, we investigated an unusual outbreak of *E. coli* O157 H7, which came to our attention when a hospitalized child with hemolytic uremic syndrome was reported to the state health department. Subsequent investigations and tracebacks eventually identified 26 culture-confirmed cases of *E. coli* and many additional suspected cases, with the initial transmission occurring in an inadequately



public health has to be balanced by ethical standards, reasonableness, and a ratio of risks to benefits.

Translating such ideas into policy is difficult in the case of smallpox, noted Kenneth Shine '61, director of the RAND Center for Domestic and International Health Security. Shine pointed out that the Bush administration's target of vaccinating 500,000 health providers has resulted in only about 36,000 vaccinations so far. Why has the campaign been so problematic? The initial target was motivated by political pressures rather than sound models, Shine said, adding that some of the risk assessments used to create the policy overestimated the

spread of a smallpox outbreak. And, as Toomey pointed out, the smallpox vaccine "remains the most dangerous inoculation ever routinely used," with about one to three deaths per million vaccinations and many more cases of complications.

"The case for the health provider vaccination was not made compellingly," said Shine, adding that he believes vaccinating a smaller number of health providers would be enough to ensure an effective response to outbreaks. In the future, he added, "We must insist that it's the data driving the decisions." ■

*Courtney Humphries is a science writer for Focus.*

# BATTLE

A public health leader examines the political costs of vaccinating against an eradicated killer

chlorinated pool at a water park. This outbreak was not a bioterrorism incident, but the manner in which the cases were identified—with an initial case leading to an extensive investigation involving many public health officers and health care providers throughout Georgia and other states—more accurately reflects how a covert bioterrorist attack would likely be identified and tracked.

Although virtually any biologic agent or toxin could be used in a bioterrorist attack, several—including brucellosis, tularemia, plague, and anthrax—have been studied for their potential use in germ warfare. The possible use of smallpox as a biologic weapon has been of special concern, however. Smallpox, caused by the variola virus and a scourge of mankind for centuries, was declared eradicated worldwide in 1980 after an intensive global vaccination campaign. The last case of smallpox in the United States occurred in 1949, but routine vaccinations continued until 1972.

The smallpox vaccine, a live-virus vaccine using vaccinia virus, remains the most dangerous inoculation ever rou-



**TAKING NO CHANCES:** Investigators in protective suits stand outside the Hart Senate Office Building on Capitol Hill last September, following the finding of a suspicious note with a reference to smallpox on it. The building reopened shortly thereafter.



## Smallpox dropped off the media radar screen

Our final decisions were framed by our assessment that we could not risk a single bad outcome from the vaccine program. To accomplish that goal, we felt the need to balance our critical smallpox preparedness efforts with frank acknowledgement of the vaccine's risks and the reportedly low probability of an imminent attack. Without a change in intelligence to suggest that a smallpox attack was likely, we chose to implement an appropriately aggressive but careful plan that emphasized education and response preparedness rather than the total number of vaccinees—a plan that would ensure an effective response but with less risk to the health and safety of participants.

The decision about how to proceed was one of the most difficult I have made during my tenure as state health officer, in part because my staff and I recognized that the price of failure would be high. In the first step, we would focus on the Atlanta area, vaccinating public health response teams and hospital staff from the regional trauma centers, the hospitals that had been working most closely with public health on other emergency response activities. Next, we would vaccinate public health and trauma center staff from outside Atlanta. In the final phase, we would offer vaccination to staff from any other willing hospitals in the state.

We tightened the criteria for screening beyond those recommended by the CDC and at each step included multiple screens of participants to ensure that neither they nor their family members had any health conditions that might put them at risk for complications. After each step, as we expanded to a larger cohort of vaccinees, we included a comprehensive evaluation of all our activities—the vaccination procedures, the public's and potential vaccinees' understanding and acceptance of our educational messages, and an assessment of other unpredicted events—to allow us to constantly refine the vaccination program and our overall emergency response plans.

The manpower requirements to implement this focused, careful plan were enormous, with the first step alone consuming hundreds of hours of staff time to develop materials, train trainers, train participating staff, screen vaccinees, set up clinics, and evaluate the processes to improve our procedures. We mailed bioterrorism educational materials with detailed information about the smallpox vaccination pro-

gram to every licensed physician, as well as other health practitioners, in the state. We recruited several infectious disease experts to train physician consultants in all parts of the state to ensure that we had clinical expertise readily available if we identified any possible vaccine-related complications. I met with many of the medical and hospital leaders in the state as part of these preparations to make certain that they understood the importance of our efforts and to gain their support for collaborative planning.

Our voluntary vaccination program was just one piece of our preparedness efforts. Although hospitals could choose not to vaccinate their staff, we emphasized that they had to continue to work with us to develop and test our joint emergency response plans. My message to the hospitals was clear: the choice to vaccinate was voluntary, but working with us to develop a statewide emergency response system was mandatory.

The media played a significant role in this campaign, just as they figured prominently in the way our nation perceived the risks around the anthrax letters and continue to frame the public response to bioterrorism. I often learned about incidents of potential public health importance from CNN—headquartered in Atlanta—long before reports came to me through traditional public health communication channels.

Because of the intense media scrutiny of the smallpox vaccination program nationally, and significant public interest in the program in Georgia, I was concerned that our smallpox efforts be accurately portrayed to the public, reflecting our considerable efforts to balance preparedness with adequate protections for participating staff and their families. After spending several hours with a reporter discussing our plan, I was disappointed the next day to read the headline in our local newspaper: "Georgia Bucks Bush's Plan," describing our efforts as "conservative." Subsequent press coverage was relatively balanced, and our plan moved forward as we had hoped. Our labor-intensive efforts paid off in that we documented no adverse outcomes and the collaborative process generated considerable good will from the broader medical community statewide.

But in other states, some public health and military programs reported unexpected cardiac complications, possibly



for an unanticipated reason—SARS had emerged.

related to the recent smallpox vaccinations: pericarditis and myocarditis, as well as several deaths from myocardial infarction among public health staff. After these complications were reported, several states suspended their vaccination programs until more information could be gathered about the actual risk for cardiac complications from the smallpox vaccinations. In Georgia, after long debate among public health leaders, we decided to continue our vaccination program. Using the same cautious approach we had taken previously, we added more stringent cardiac screening criteria than those required by the CDC. Since we had built natural lulls into the state's vaccination program to accommodate evaluation, we were able to adjust our procedures without suspending our program.

The newspaper headline following our decision to continue vaccinating was as surprising as the first had been: "Georgia Pushes Ahead with Smallpox Vaccinations Despite Risks." With the same careful, balanced approach in carrying out what we still consider to be a strong, science-based program, our efforts, initially perceived as tentative, were now considered reckless.

That was the final news report about our smallpox program. Smallpox dropped off the media radar screen for an unanticipated reason—SARS had emerged as the health concern that dominated the press and the public's attention. But the recognition of SARS was also a wake-up call for those of us working in public health. Whereas our smallpox plans—from clinics to operational protocols for quarantine and isolation—had been theoretical and seemed unlikely ever to be implemented, now abruptly we were confronted with the reality of an actual emerging infection that required us to implement these plans with some urgency and with unprecedented infection control implications.

Fortunately, we have now been able to broaden our continuing smallpox vaccination efforts to ensure that the education, training, and planning we are developing jointly with hospitals and the medical community are applicable to any infectious agent or any emergency event. And we have incorporated SARS-specific information, in addition to the intensive smallpox vaccination guidance, into our vaccination training as we wind down this phase of our smallpox vaccination program.

We learned much from this experience, and, I believe, gained the respect of our partners in the medical community by our careful efforts to ensure that our policies and plans were based on science, not politics. The active participation of the academic and clinical medical communities in this process has been a model for how other public health programs must function in the future. We recognize the important role the media played in framing our efforts. Proactive communication and coordination with the media will be considered an essential part of our overall preparedness planning, to ensure accurate and responsible reporting at a time when this information may be critical to the public's health.

I want to frame this discussion with yet another perspective, by quoting Brian Strom, chair of the Institute of Medicine committee charged by the CDC with evaluating the national smallpox efforts. His thoughts from a recent interview certainly reflect the ambivalence all our staff felt as we planned and implemented this smallpox program: "From a public health point of view, it makes no sense to give a vaccine that kills people against a disease that doesn't exist. This is not a public health campaign, it's a biodefense campaign."

This will not be the final time that we—public health and the academic and clinical medical communities—will be confronted with these challenges, particularly as we continue to play an ever-increasing role in our nation's homeland security and bioterrorism prevention efforts. We will never be able to anticipate every possible threat or prepare for every possible contingency. But we can and should use these programs as opportunities to strengthen and sustain both the overall health system and the crucial interface between public health and medical care. We must ensure that we are able to mount an agile and effective response regardless of the threat that confronts us—whether it is smallpox, anthrax, SARS, pandemic influenza, or *E. coli*. If we are not aggressive about our commitment, ironically, we will have squandered the great opportunity to improve our health system that this war on terrorism has provided us. ■

*Kathleen Toomey '78 is director of the Division of Public Health of the Georgia Department of Human Resources.*



# THE ONCE AND

A medical historian draws parallels between today and 1721, when Zo

by ALLAN BRANDT

**T**HE EVENTS OF SEPTEMBER 11 AND THE ANTHRAX attacks that followed have fundamentally reoriented our public health priorities, the way we think about medicine and science, and our views on social and medical uncertainty. The potential threat of smallpox, in particular, raises urgent questions about how societies will mediate a range of concerns in the coming century, including our responses to bioterrorist threats. Smallpox also has a deep, historical connectedness to earlier times, when our forebears faced the same disease and considered overlapping questions of how to proceed in the face of phenomenal uncertainties, especially as they relate to issues of health and disease.

It wasn't supposed to be this way. In 1980 the World Health Organization announced the eradication of smallpox. It was one of the greatest public health triumphs in history and marked a moment of incredible hopefulness about the possibility of stamping out many infectious diseases. Now that we've eradicated smallpox, people asked, how can we eliminate malaria? How might we eradicate tuberculosis? These optimistic questions no longer occupy center stage as we face today's threats of bioterrorism.

Throughout its centuries-long history, smallpox has sharply defined tensions between individual rights and the collective good of society. It raises issues of safety and efficacy, the rights of individuals, the responsibility of the state, and our obligations to each other. These are the same issues that were vigorously, sometimes violently, confronted in Boston in 1721.

When smallpox returned to Boston in the spring of that year, the city was already intimately familiar with the disease. Many of those who had journeyed to the colonies had done so in part to escape smallpox and other endemic diseases of Europe. But while the New England settlements and the

colonies that followed often suffered periods of intense smallpox epidemicity, they did not experience an endemic smallpox as it existed in Europe. The disease especially wreaked havoc on indigenous populations in New England in the seventeenth and eighteenth centuries. During the first century of European settlement, historical demographers estimate, as many as 90 percent of the region's indigenous people died of smallpox and other infectious diseases brought by colonists.

Whenever smallpox appeared in a city or town in the early eighteenth century, as much as one-quarter of the population tended to die. Yet those who lived through the disease had lifetime immunity, a fact understood at the time. George Washington had contracted smallpox during a visit to the West Indies, for example, and it was widely known that he would not be vulnerable to any subsequent epidemics.

In the spring of 1721, a boat sailing from the West Indies carried seamen with likely cases of smallpox. Even though the boat was quarantined in Boston Harbor, some crew mem-

bers disembarked, sparking an epidemic. A leading cleric in Boston, Cotton Mather, had learned of the procedure of variolation from his slave Onesimus. This inoculation involved inserting pus from a smallpox patient into a healthy individual through a scarification process that would confer a mild case of the disease and then immunity to those who had been inoculated.

Mather began to advocate for a major inoculation campaign by sending a letter to all the physicians of Boston. Only one responded, and not a particularly eminent one at that: Zabdiel Boylston, who, following Mather's lead, became an advocate for smallpox inoculation. Boylston inoculated his six-year-old son, his two slaves, and then himself. I often invite my students to consider the moment when Boylston stood above his young son, making the decision to inject live smallpox virus into his child's bloodstream, a procedure not well understood at the time.

Ironically, although Mather supported inoculation, the organized medical profession in Boston, led by William Douglas, opposed it aggressively. "Many have died from the infection received from the inoculator," Douglas wrote to



# FUTURE SCOURGE

el Boylston took a momentous gamble by inoculating his own child with the smallpox virus

Mather. "Their deaths in great measure lie at the inoculator's door." Mather's house was bombed, and the perpetrator left a note: "Cotton Mather, you dog, damn you! I'll inoculate you with this, with a pox to you!"

Perhaps Mather was able to advocate for smallpox inoculations precisely because he was not a physician. The very idea of a physician deliberately introducing a disease into healthy individuals represented a new concept that the relatively weak and poorly organized medical profession in Boston simply wasn't prepared to accept.

By the late summer of 1721, in one of the first instances of intensive public health surveillance, Boston officials began to compare the number of cases among those who had been inoculated with those who had not. Of the 6,000 people infected while uninoculated, 14 percent had died. Of the 300 people whom Boylston had inoculated, only 2 percent had died. As a result, inoculation soon became widespread. But physicians still feared that inoculating in anticipation of an epidemic could implicate them in the spread of the virus. This fear would persist until after 1796, when the noted physician Edward Jenner carried out his first experimental vaccination, which paved the way for the remarkable transition from inoculation with the actual smallpox virus to vaccination with the related cowpox virus.

Throughout the eighteenth century and into the nineteenth century, the debate continued about how many cases of smallpox were needed to justify inoculation. In fact, many states passed laws banning inoculation, except during times when the disease reached an explicitly determined level of epidemic at which they believed that the risk/benefit ratios shifted significantly.

By the early twentieth century, the government was often stepping in to mandate public health programs and vaccinations. Again, Boston figured prominently in the story. In 1905, Henry Jacobsen, a man from Cambridge,



**THE SHOT PREFERRED ROUND THE WORLD:** Despite its dangers, Edward Jenner's smallpox vaccine was eventually embraced as less risky than the deadly virus itself.

refused to submit to the mandatory smallpox vaccine being administered in Boston at the time. The case went to court and led to what may be the most important public health litigation in the history of the modern United States: *Jacobsen v. Massachusetts*.

In his decision, Justice Joseph Harlan specified four constitutional standards that became the basis for how, within our democratic society, we tend to balance individual rights with the social good. These requirements were: a public necessity; a reasonable means to prevent or ameliorate the threat; proportionality in the sense that the burden could not be disproportionate to the public health benefit that was expected; and the assurance that the subjects of a particular intervention would not be exposed to any undue health risks.

These criteria illustrate a deep sense of continuity between historical approaches to the problem of smallpox and infec-

tious disease and our own contemporary attitudes. The threat of bioterrorism is now forcing us to confront a series of complicated and difficult ethical questions.

Most of us who received smallpox vaccines as children were inoculated too long ago to have any remaining immunologic response. And most Americans were born after smallpox vaccination was discontinued in 1972. We are now vulnerable in the way that indigenous peoples of North America were vulnerable in the sixteenth and seventeenth centuries.

No single algorithm can tell us how to approach disease prevention in a democratic society. But we need to create better opportunities for collaboration and cooperation. Vaccination programs test our ethics, our sense of community, and our essential notions of the collective good. We live in a culture of intense individual rights, with an often fractured sense of



# LESSONS FROM VAC

B

by KENNETH SHINE

UGS HAVE LOTS OF TRICKS. BEFORE THE anthrax attacks of 2001, we thought that it took at least 10,000 to 15,000 organisms to cause anthrax in humans. But the attacks showed us that a much smaller inoculum could cause people to become sick. ■ The spread of the West Nile virus throughout the United States arose in

part from a failure in mosquito abatement on the East Coast. But the real surprise was the appearance of West Nile in the blood supply and in organ transplants.

And the smallpox vaccine, prepared with a live virus, has only recently been associated with myocarditis and pericarditis—complications never before recognized with vaccination. Such trickery reminds us that we need to maintain a substantial amount of humility in confronting infectious organisms, both when they occur naturally and when they are manmade.

We must also recognize that health policies may cause unintended consequences. Public health officials in north-

ern Virginia are predicting an increase in teenage pregnancies, for example, because the people providing teenage pregnancy counseling were suddenly called on to develop a smallpox vaccination program. Those responsible for monitoring sexually transmitted diseases also were required to get involved in the smallpox program, resulting in a lack of follow-up in disease monitoring in many jurisdictions.

These are just two examples of the unintended consequences of health policies, particularly when those policies are unfunded stopgap measures;

although federal money has been allocated to states to support public health, the smallpox program itself was not specifically funded.

Public health policy is intimately related to politics. Politics, public policy, and health policy are constantly interacting in ways that are difficult to balance. If we want volunteers to submit to a vaccine, for example—particularly when they are healthy, intelligent, and well educated—we need to develop a better case than the one that has been made thus far for smallpox. Although the Bush administration's original plan called for 500,000 health providers to be vaccinated, only around 36,000 have been inoculated to date.



collective good and collective action. We also live in an age of a declining public health infrastructure, rapid changes in professional values and notions of professional responsibility, and a powerful, sometimes irrational, belief that all risks of medicine and public health can and must be banished.

The debate over vaccination in the United States and in other countries is today, as it was in 1721, a powerful reminder that any medical intervention is only as effective as our ability to deliver it in timely ways that are civically and consensually understood. We need to do much to educate both health care professionals and the public.

Collective perceptions of risk and benefits are forged in historically specific ways: What is the threat? What are the alternatives? Who will be at risk from any particular intervention? How are these risks understood and shared? The

adverse consequences of vaccinations are not constant; they're forged in a culturally specific moment that shifts. One of the many terrible consequences of terrorism is that it disrupts our most rational and thoughtful approaches to maintaining the public good. It also disrupts our capacity for planning and for allocating resources fairly.

In this post-September 11 age, it will be important to resist powerful tendencies to act on small and unsubstantiated fears, while simultaneously resisting our capacity to deny them. When public health is caught between the Scylla of hysteria and the Charybdis of denial, the public's health is the ultimate casualty. ■

*Allan Brandt, PhD, is the Amalie Moses Kass Professor of the History of Medicine at HMS.*

# CINIA

The smallpox virus challenges policymakers to weigh hypothetical risks against medical realities

Smallpox is only one of a number of potential threats. Anthrax, plague, and tularemia are all endemic in this country. We have antibiotic treatments and vaccines for all three of these diseases, but the vaccines are not very good. The anthrax vaccine requires six injections over 18 months. Just imagine how complex it would be to undertake a major anthrax vaccination program in a large population.

Bioterrorists, in fact, could use many viruses, but smallpox would make a particularly effective weapon because it is highly contagious; plague can be communicated from person to person in its pneumonic form, but tularemia and anthrax are not contagious from human to human, as far as we know. On average, the mortality of smallpox outbreaks around the world has been in the range of 30 percent, although many of those deaths occurred before some of our current antibiotics were available to treat secondary infections.

Clearly, the smallpox virus can be weaponized; the Russians spent huge amounts of money to this end. But

there is an effective vaccine, and enormous political pressure in the aftermath of September 11 and the anthrax attacks has been mounted to respond to the potential smallpox threat. Policymakers need reassurance that they will not be held responsible for a catastrophe that they



**VIAL CHOICES:** The threat of bioterrorism has forced officials to balance the risks of a problematic vaccine with the vulnerability of an unvaccinated population.

# S

## mallpox weaponization is a risk, but the

might have prevented. Therein lies the dilemma, where health and politics come together. Political leaders in this kind of situation desperately need to be able to say, "We did everything that could have been done."

We should remember several important points about smallpox. The first is that after active exposure—even if it's to aerosolized smallpox—people are not contagious for seven to seventeen days, creating a window for immunization. We know that vaccination has some effect within the first three to four days either to ameliorate or prevent the illness. But it also means that between each wave of smallpox, there is a lull, and that lull is the window in which vaccination could be carried out to eliminate the disease. If we could identify a case and immunize everyone around it, we could prevent the spread fairly quickly.

Also, when the first symptoms of smallpox occur, people have high fevers and feel sick, so they take to their beds. This is important, because smallpox is essentially spread through close contact. In fact, one of the earliest examples of bioterrorism may have taken place during the French and Indian War, when soldiers purportedly threw smallpox-infested blankets over the walls to unsuspecting Indians.

I believe that the original recommendation of the Advisory Council on Immunization Policy, which was to immunize about 10,000 first responders around the country, was, in fact, a rational policy, not because I expect a smallpox attack, but because I believe that every medical institution needs someone who is comfortable examining people with smallpox symptoms. In California, for example, a woman recently appeared in a hospital with vesicular lesions on her hands. The doctors were understandably concerned about examining her. Yet when they took her history, they discovered that she milked cows and had contracted cowpox, a virus that resembles smallpox.

Scientists have developed a number of scenarios to try to determine the risk of a smallpox epidemic in the United States. Given the way in which the virus is transmitted, I believe that some of these scenarios are unrealistic, because they use "R" numbers—the number of cases that might arise from exposure to an infected person—that are too high, on the order of eight to ten. Sam Bozzette and his colleagues,

who are part of our research group at the RAND Center for Domestic and International Health Security, recently published a paper in the *New England Journal of Medicine* in which he explored a number of scenarios for smallpox in this country. He looked at epidemics as they recurred throughout history and found that the average R was about three. That is, if you do not intervene in the natural history of a particular case, about three additional cases will occur.

It makes a big difference whether the number of cases in the cascade is three or ten. Bozzette showed that the only scenario that would justify vaccinating an entire population would be the aerosolized infection of large numbers of people at multiple sites, such as airports—a scenario with a relatively low probability compared to a series of single releases over time. As a result of those analyses, he concluded that it is not appropriate to vaccinate the general population on the basis of current information. The Institute of Medicine has also emphasized that if you're going to immunize small numbers of people, you need to study them carefully to understand what the effectiveness and side effects will be.

All known stores of smallpox are located either in Russia or at the U.S. Centers for Disease Control and Prevention. The Russians have no more reason for letting smallpox out of their hands than we do. They do not want to be blackmailed by terrorists. The notion that Moscow might be a source is predicated on the theory that a disgruntled Russian scientist, out of work in a faltering economy, might sell the virus to some rogue group or government. But think about how valid our intelligence was on weapons of mass destruction in Iraq. Then ask yourself how good we might be at assessing this bioterrorist threat.

How easily can smallpox be weaponized in large amounts? It's not easy to weaponize any of these germs. If the person who released anthrax had had access to a significant amount, I doubt he or she would have stopped at sending only two contaminated letters. We know smallpox weaponization is a risk, but the question is, where should we place it in the range of risks?

Individual risk assessment is also key. It makes a difference whether you live in New York City, Chicago, San



question is, where should we place it in the range of risks?

San Francisco, Los Angeles, or East Cupcake. Because if you're in East Cupcake, it's unlikely that you'll be exposed to smallpox, given the relatively small risk of an event and the low probability that it will occur in East Cupcake.

Smallpox was originally controlled by ring vaccination, which involves isolating confirmed and suspected smallpox cases and tracing, vaccinating, and using surveillance of their contacts. But a number of models have suggested that this approach won't work. At the very least, if we're going to use ring vaccination, we need to have a good national policy, stores of the vaccine strategically located around the country, and first responders trained to mobilize rapidly.

At the same time, should there be one proven case of smallpox anywhere in the world, it would be difficult not to offer the vaccine to everyone. If that one case is in the United States, people will argue that everyone who wants to be vaccinated should be given access to the vaccine. An interesting ethical question arises: if we have 380 million doses, and the first case appears in Britain, and public officials there don't have any doses, what do we do?

After September 11, the secretary of the Department of Health and Human Services decided to obtain enough smallpox vaccines for everyone in the United States. He had a great deal of money, but he received much less for his money than he had anticipated, because the pharmaceutical industry is not particularly interested in vaccine production. Vaccines cost an average of \$800 million to develop, and companies don't make much money from them, because recipients get only one or two doses.

Since 1993, the Institute of Medicine has been advocating for a national vaccine policy. I think the BioShield proposal that President Bush inaugurated this year, which is to provide five or six billion dollars of guaranteed market for new vaccines, is promising. But the industry skepticism about this proposal is enormous. The fear is that it will neither fully offset the cost of vaccine development nor offer a guaranteed return on investment. The return on investment of the defense industry is in the range of 7 to 9 percent; the return on investment in the pharmaceutical industry is close to three times that. Convincing the pharmaceutical industry to pursue vaccines will be chal-

lenging. The biotech industry is more likely to be attracted to this opportunity.

Public health in this country has been undersupported for at least 30 years, and we tend to respond only to individual threats. In 1964, I personally saw 100 cases of St. Louis encephalitis in New Jersey. This virus had been introduced at a time when mosquito abatement programs were discontinued and the bird population had become richly infested. We were able to control the spread of the virus by rapidly killing mosquitoes.

But here we are in 2003, and the West Nile virus has descended on us because, again, our response to public health has been episodic. The anthrax attacks led to a \$2.6 billion increase in funding this year, but we need sustained efforts in public health. And we must avoid the crowding-out effects—the tendency to work on bioterrorism at the expense of chronic illnesses such as asthma in inner-city kids and a range of other pressing public health concerns.

Smallpox illustrates the conflict between individual rights and community welfare. Many people have declared that they should be vaccinated if they want to be. But if the vaccine carries even a small risk of viral transmission to others, should they have the right to be vaccinated? This dilemma differs from those in the past, when the standard immunization argument was that individuals were vaccinated to protect the larger population.

How do we strike the right balance? Life will never be as it was before September 11 and the anthrax attacks. But can we balance the risks and benefits in a way that will protect health without ruining public health systems? Can we do it in a manner that will improve health without exposing people to undue risks?

The bugs will continue to play plenty of tricks. Every epidemic, every outbreak teaches us new lessons. We need to provide policymakers with the best data we can in the most honest and objective way we can. And we must insist that it's the data driving the decisions. ■

*Kenneth Shine '61 is a senior policy fellow and director of the RAND Center for Domestic and International Health Security.*

# OUTSIDE THE BOX

M

by JOSEPH B. MARTIN

EDICAL EDUCATION TODAY FACES FOUR GREAT challenges: the cultural chaos of academic health centers, content challenges in curriculum, the crisis in contemporary medical education costs, and culturally competent care. In focusing on the first of these, I am reminded of a quote attributed to President Dwight Eisenhower: "Things are more like they are today than they have ever been before."

In his award-winning 1999 book, *Time to Heal*, medical historian Kenneth Ludmerer of Washington University in St. Louis describes how the climate for medical education in the United States was changing as we approached the twenty-first century. Under managed care, faculty clinical practices had expanded, but their profit margins had fallen, and as Ludmerer says, "Medical schools were running on an ever-quickenning treadmill—seeing more and more patients to compensate for continuing drops in profitability per case." The crisis in health care financing and the increased patient care responsibilities of clinical faculty meant that faculty members had less time for teaching, and less time and money for research—thus undermining the two central missions of their medical schools.

These are the problems that Harvard Medical School and its extraordinary teaching hospitals face as we continue our adventure into the twenty-first century. The past 18 months

have been a time of intense self-evaluation of our teaching mission at Harvard Medical School.

One driving force has been the accreditation process undertaken by the Liaison Committee for Medical Education, which began in the fall of 2001. The LCME site visit this April—which produced excellent reviews of our School on the whole—was preceded by long months of work by nine self-study committees, which scrutinized every aspect of the School's resources, operations, and outcomes. Most of these

committees were concerned in some way, directly or indirectly, with the educational experiences of our students.

So what are we doing about this problem at Harvard Medical School? In the fall of 2001, Daniel Lowenstein '83, who was then dean for medical education, and George Thibault '69, director of the Academy at Harvard Medical School, established two ad hoc committees, which we called "blue sky" committees. These groups labored over the next year to produce a potential blueprint for major curricular reform at the School. The Clinical Blue Sky Task Force focused on the problems of clinical education and alternatives to the traditional, discipline-based clerkships. The General Blue Sky Task Force concentrated on the entire approach to medical education at Harvard, from undergraduate prerequisite courses all the way through graduation and the transition to residency training. Both task forces were encouraged to

The task force was charged with making a set of critical

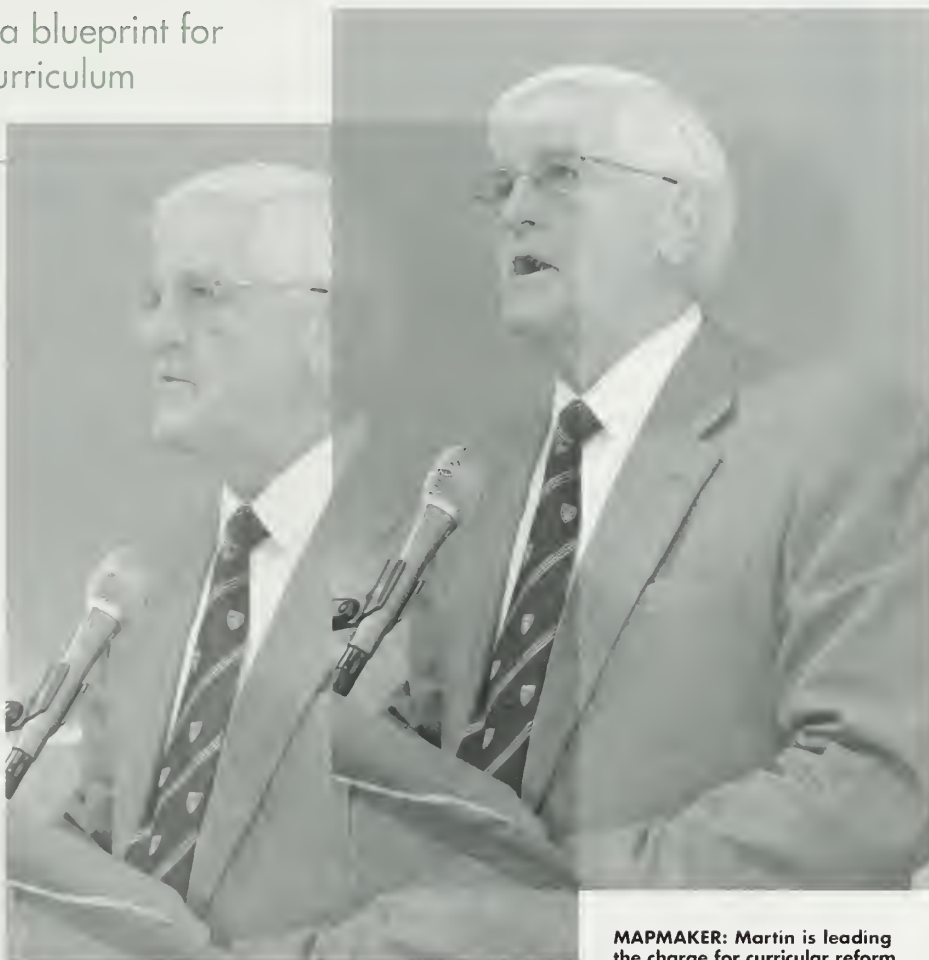


## The dean of HMS seeks a blueprint for reforming the medical curriculum

think broadly and stay outside the box as much as possible. The two groups met together in September 2002 to synthesize their recommendations.

In January of this year, the Task Force for a New Curriculum was formed, co-chaired by Phil Leder '60, chair of our Department of Genetics and a highly respected teacher, and George Thibault, a cardiologist with a lifetime commitment to student and resident education, to take the next steps. The task force was charged with making a set of critical decisions about the undergraduate medical education program and the future direction of the School.

The group met intensively from January through early June. After reviewing the reports of the blue sky committees, the task force heard the perspectives of selected students and faculty on the current state of the curriculum and perceived areas for improvement. Task force members also reviewed recent reports issued by the Association of American Medical Colleges and the Shapiro Institute for Education and Research at Beth Israel Deaconess Medical Center, along with curricular reforms at other U.S. medical schools. The task force issued a draft report, and I'd like to share with you some of its conclusions, with the caveat that the report is still a work in progress.



**MAPMAKER:** Martin is leading the charge for curricular reform.

In its introduction, the task force noted that Abraham Flexner, in his historic 1910 report, had observed that "for medical education to flourish from one generation to the next, it [has]...to reconfigure itself in response to changing scientific, social, and economic circumstances." The HMS task force added that "Medical education is in a constant relational process to scientific discovery and the delivery of medical care...It is the responsibility of the medical profession, and medical educators in particular, to be vigilant in configuring the medical school curriculum to keep pace with the 'changing scientific, social, and economic circumstances,'" as Flexner urged nearly a century ago.

decisions about the medical education program.



## linical education can only be reformed by

The New Pathway curriculum, which began its planning stage 20 years ago, reformed and reinvigorated the educational experience for Harvard medical students and served as a national model for similar reforms. But despite all the New Pathway has accomplished, one of its central aims—the true integration of clinical and basic science learning throughout four years of medical school—remains a largely unfulfilled promise.

Given the vast changes in the practice of medicine over the past two decades and the explosive growth of scientific knowledge and technology, it is indeed timely that we now readdress the questions of the appropriate model for clinical education. There is a pervasive and growing sense—not only at Harvard, but around the country—that current approaches are no longer working. Let me report on some of the observations that have defined this sense of unease with the clinical phase of the student experience:

- Hospital inpatient services are becoming less representative of the full spectrum of illness and patient experience. Rapid patient turnover limits opportunities for students to develop relationships with patients and follow their progress over time.
- The increased pace and intensity of the hospital environment makes it less hospitable to the educational needs of students, who are often marginalized as members of inpatient teams. For example, students rarely take a history or perform a physical exam on inpatients.
- Clinical faculty—particularly senior faculty—are less involved in students' education, and a student's contact with a faculty member or resident may be transient.
- Ambulatory care offices operate with severe time constraints, compromising the ability of students to learn well in those settings.
- Evaluation of student performance is highly variable. The lack of direct observation of students by faculty is a major problem in both inpatient and outpatient settings. The tools used to assess students are not very useful in discerning whether they have achieved core competencies.
- Students receive too little opportunity to appreciate the importance of science as the underpinning of clinical

medicine, and to address social, ethical, cultural, and professional issues. And finally,

- The variability in the content and educational rigor of the clinical experience is unacceptable. Students are often not provided with explicit clinical goals.

In seeking solutions to these urgent problems, the task force went on to note that “close cooperation among the Medical School, affiliated hospitals, and clinical departments will be required to design experiences that meet the educational needs of students and that can be implemented in the context of the present health care system.”

The deficiencies in the clinical setting are perhaps the most acute and glaring problems facing us. But clinical education can only be reformed by looking at the entire spectrum of the student experience. The task force pointed to several other issues involving the medical education system as a whole.

First, a major overarching concern is that basic science and clinical medicine are not well integrated across the four-year curriculum. Students lack clinical experience in the early years, and basic science is largely ignored in the latter years.



**STRENGTH IN NUMBERS:** The rich contributions of the HMS alumni community have helped drive the dean's proposed curricular changes.



## looking at the entire spectrum of the student experience.

Second, in the tutorial system—designed to be the centerpiece of the curriculum—both faculty and students have commented that the bar has not been set high enough for our students. The task force notes that, “The tutorial should be a constantly evolving process that changes with each course and continuously challenges the students”—a goal that has not consistently been met.

Third, the task force compiled a list of questions that reveal the enormous scope and breadth of what we are embarking on as we look to reform our curriculum. Many of these questions go right to the fundamental nature and structure of medical education: What is the appropriate timing and sequence of the clinical and basic science experiences? What is the optimal duration of undergraduate medical education? What should the core requirements be for all students?

Should students be encouraged or required to pursue a special interest or concentration? How should the final year of undergraduate education optimally be used, and how can the transition to postgraduate education be managed better? Are there important synergies that can be developed in the School’s major commitments to prepare future physicians and scientists?

How can we create the environment and opportunities for students and faculty to form meaningful and lasting relationships? Mentoring, yes; but perhaps as important, mere friendship. And, finally, how can we find better ways to reward clinical teaching?

The challenges looming ahead are formidable, but the good news is that we are facing them from a position of great strength. Observers from within and outside the School have found much to praise. The LCME site visit team gave high marks to our educational and research programs; the excellence of the students, faculty, and leaders of the School and its teaching hospitals; the promise of the Academy to promote innovations in education; and our state-of-the-art facilities and information technology infrastructure.

We know it will not be easy to fix the problems facing us. The changes that have caused them are not going away. Like many other schools, we are looking for answers. But as it has throughout its history, Harvard Medical School

again has an opportunity to take the lead in the search for these answers. Let me predict some of the recommendations that the task force may choose to make:

- A major restructuring of the entire four-year curriculum—from start to finish.
- Better mechanisms for supporting and rewarding teaching faculty. The new Academy at HMS is a step in that direction. Financial rewards, promotion, and recognition for teaching will need to be addressed.
- A review and, if necessary, a revision of the pedagogical methods used throughout the curriculum, with a special emphasis on renewing and improving case-based tutorial teaching.
- Identification of the most appropriate ways for students to achieve in-depth educational experiences to complement the breadth of the general curriculum.
- A review and, if appropriate, a revision of the requirements for admission to ensure that students enter medical school with the knowledge base and skills required for a modern medical education.
- The establishment of a structure for curricular reform that includes an oversight or steering committee and interdisciplinary and inter-institutional working groups of faculty that focus on each of these recommendations.
- The establishment of a built-in mechanism—using the Council on Educational Policy, the Academy, the academic societies, the Office of Educational Development, and the faculty at large—for encouraging continual innovation, renewal, and evaluation of the curriculum.

In the final pages of his book on medical education, Kenneth Ludmerer calls for leadership and challenges us to address the issues he raises. We at Harvard Medical School accept that challenge.

I look forward to working with our new dean for medical education, Malcolm Cox ’70, over the next year to implement the recommendations of the task force, and I will keep you posted regularly on our progress. ■

*Joseph B. Martin, MD, PhD, is the dean of Harvard Medical School.*



# Reunion Reports

HMS alumni return for a time of celebration and remembrance

## 1943A

### 60th—1943A Donald McLean

The 60th reunion of the Class of '43A (officially the last) began in the Quad-rangle on June 6 with picture-perfect weather. Following the festivities and lunch the class picture was taken. In the evening, the classes of 1943A and 1943B gathered together in Gordon Hall (the old Building A) for a happy hour and a super dinner. Under the able direction of Ben Eiseman, members of both classes were invited to relate episodes in their lives that had left lasting impressions on them. All of the tales were unrehearsed and unforgettable.

John Trakas and Morgan Berthrong, for example, described their experiences during the Battle of the Bulge in Bastogne, where they were combat medical officers in different units. Their stories were indeed spellbinding.

The final day, Bobby and Joe Murray '43B again brought closure to a memo-

rable reunion with a party at their lovely home. It may have been raining, but our farewell party was delightful and a wonderful way to remember our final reunion.

Despite the festive atmosphere, we were all deeply saddened by the loss of Arthur Guyton and his wife, Ruth, who died in an automobile accident in April.

I wish to express our deepest appreciation to Jean Hurd of the Alumni Office, who gave so much time and showed such dedication to making our reunion a success. I would also like to thank all our devoted classmates who have worked so hard to make all ten of our reunions so successful and special.

There is no more fitting way to close this report than to quote our late, beloved editor, E. P. Richardson, Jr.: "For those of us who are still around, let us keep up contacts with one another, through meetings or other opportunities that may come up. We are a lucky group." ■



# 1943B

## 60th—1943B Joseph E. Murray

As class agent, I receive many notes from classmates; especially treasured are those from the widows and children of alumni. At our 60th reunion, John Hubbell and I shared some of them at the Friday class dinner in the faculty room and at the Saturday brunch at my home.

Especially memorable were photos that had been forwarded by the late Farrington Daniels, taken in the summer of 1943, when we shipped off to Fort Devens for our activation to military duty. Dick Bagnall recalled that during the war he had been sent to Yale to learn about health problems in the Far East and to study conversational Japanese. He ended up first in Okinawa and then in Korea. Dick's troops took care of the surrender of the Japanese at the end of the war.

On a more contemporary note, we were pleased to learn that Bob Glaser had been honored at Harvard's commencement exercises. Bob received the Harvard Medal in recognition of his extraordinary service to the university.

Bill Garrido-Lecca's health did not allow him to travel, but he sent his best

wishes to all of his classmates and a beautiful bouquet as well.

John Tuthill's family has established a land trust on Martha's Vineyard, which is a joy to all of us who drive by it in our travels there.

Bill Pollock's widow, Margaret, mentioned that she and Bill had traveled all over the world, including both poles, and had enjoyed a full life together. She remembered fondly our previous reunion.

John Lloyd, who died last fall, deserves special comment, for as a surgical resident with me at the Brigham, his kindness in the care of each patient was outstanding.

John Winslow's widow, Ellie, was sorry that she had never come to know many of John's HMS friends but she knew of his great love and respect for the School and his experiences there.

Maxine Clarke came with her daughters Mary and Nancy. Their presence added to the warmth of the occasion, as did that of Rudy Jaworski's daughter Judith.

Since the reunion, I've received many warm letters of thanks. It is a privilege to be able to share my experiences at HMS, a veritable fountain of youth. ■





## 1948

### 55th—1948 Alfred Scott

Twenty classmates returned for our 55th reunion. Considering that there are 90 surviving of our original 141, this is not as high a percentage as we might have liked, even taking our increasing ages and disabilities into account. Nonetheless, those who did attend, mostly with spouses, found the renewal of friendships greatly enjoyable.

We were fortunate to have our two deans, Dan Tosteson and Howie Hiatt, in attendance. Dave Chamovitz won the distinction of having traveled the farthest (from Israel). We also had three classmates from California (Jerry Applegarth, Bill Kiyasu, and Tom Vecchio), and from Arizona the irrepressible Roger Wilcox. Sig Gundersen has made all of our reunions. Walter Rattan also attended from Wisconsin. Al Simkus came from Florida, Gene Brand from Virginia, and the rest of us from New England.

Thursday, many attended either the 25th class symposium or the faculty symposium on technology in medical education and practice. Both were excellent. After the symposia, we convened for a reception in the third floor atrium of Gordon Hall. It is hard to believe that such a pleasant room exists in the old Building A. The School certainly changes.

Friday's activities included Alumni Day on the Quadrangle, which featured an alumni symposium on smallpox and Dean Joseph Martin's outlook on the upcoming changes in the curriculum. That evening we gathered 38 floors above Boston in the Bay Tower Room for cocktails and dinner. The usually fickle weather cooperated and the views over Boston Harbor at sunset were spectacular.

On Saturday, 16 of us opted to move to the Colony Hotel in Kennebunkport, Maine, for the weekend. Our "weekend out of Boston" reunions have all been memorable and this one was no exception, taking place at a very pleasant resort hotel.

These activities really provide only a background to the more important and most enjoyable feature of these reunions: the opportunity to converse one on one with classmates with whom we once shared a common experience and to discover how our lives and thoughts have changed since we last saw each other.

Our special thanks to Jim Bougas and Cris Criscitiello for their work on the reunion report and to Ed Gray for keeping all our expenses in order. Jean Hurd and the Alumni Office staff handled most of the organizational details; that they can do this for all the returning classes is remarkable! ■



# 1953

## 50th—1953 Iolanda E. Low

The 50th reunion, the “Big One” for our class, started with a welcoming get-together in the Countway Library with hors d’oeuvres, lively conversation, and varying reactions to name tags with our ’49 pictures, which erased the past 50 years as if by magic. The evening became truly elegant with the wonderful music provided by Phil Bromberg (violin), Fritz Loewenstein (viola), and Lucy Riesman Loewenstein (cello). They played the music of Beethoven and Schubert, as well as the Romanza movement of Dohanyi’s Serenade op. 10, in memory of cellist Peter Keleman ’52.

Alumni Day was chaired by our own Dan Federman. For us, the highlight came when Marilyn Karmason Spritz presented the 50th reunion gift of approximately \$260,000, one of the largest raised, to establish “The Class of 1953 Scholarship” in perpetuity.

That evening we reassembled at the Downtown Harvard Club. Before we sat down to a lovely meal, a solemn moment was invoked by reading the names of our departed classmates and observing a moment of silence in their memory. Classmates then shared memories both funny

and sad of our years together, family and professional milestones, and plans and hopes for the future. It was an informal but emotionally satisfying way of creating a bond among so many who had traveled long and diverse paths since graduation.

Though Saturday started out clear and dry for our marine excursion on Boston Harbor, the rain came earlier than anticipated. But nothing fazed our group: the excellent lobster feast, nonstop conversation, and general camaraderie did not allow the weather to dim our enjoyment.

The unofficial tally in attendance was 52 classmates plus 45 spouses. We were especially glad that Charles Bauer was able to join us, despite physical limitations. We missed the approximately 60 who were not with us, some because of poor health, and we wish them the best.

We parted feeling that we will do everything to get together again for our 55th, perhaps extending the reunion to include, once again, a weekend.

Last but not least, my thanks to the ’53 reunion committee—which included James Peters, treasurer; Dan Federman, editor; Edwin Carter; and Joseph Ciano—and the Alumni Office staff, especially Patrick Rivera, for their invaluable help. ■





# 1958

## 45th—1958 Anthony Patton

The 45th reunion of the Class of 1958 started and ended in a joyous and convivial fashion. But despite the overall theme of fun and food, some serious issues—such as the future of medical education at Harvard—cropped up.

On Thursday evening, 84 people met for cocktails and dinner under the steely eyes of our great founders in the Faculty Room of Gordon Hall. Our speaker was Gordon Harper '69, who has been instrumental in the development of the HMS Patient/Doctor program. Dr. Harper explained the value of allowing students to discuss the emotional and practical issues of dying, patient anger, staff controversies, and other prickly clinical and ethical situations. His speech sparked discussion during the whole weekend.

The Class of 1958 retired to the Stage Neck Inn on the ocean in York, Maine. On Friday evening some 52 classmates and their spouses enjoyed a typical Maine clambake. On Saturday morning, most of us participated in a free-ranging group discussion led by Jeannette and Howard Corwin (both articulate psychiatrists and our class agents). The focus was on

attitudes and choices we make about life, careers, and even death. After a spirited round of comments, Howard, with a partial attribution to Freud, summed up his view that happiness in life is made up of love, work, creativity, and the capacity to be at peace with yourself. (Your class reunion chairman would add a sense of humor and an ability to change.)

Despite an afternoon downpour, some ventured out to take historical tours and to see the Maine coast. On Saturday night, Elliott Miller spoke about the controversy surrounding William Morton's demonstration of ether as an effective and safe anesthetic agent in 1846. It was a stimulating evening and more reminiscing went on into the wee hours.

Sunday breakfast ended the proceedings and we all returned to our private lives, invigorated by renewed contact with our classmates. I thank the committee, particularly "Bernie" Carpenter, our treasurer, for all his help. Special thanks to Pete Coggins and George Jacoby for their work on the class book, and accolades to Jean Hurd in the Alumni Office for doing such a fine job in pulling it all together. Here's to a merry 50th. ■







# 1963

## 40th—1963 Paul J. Davis

Members of the Class of 1963 met this year in Boston to commemorate the 40 years since medical school graduation. Forty-seven classmates and 33 significant others convened Thursday at the Vineyards' home in Brookline for a buffet dinner, at which the Lewits offered uncorrupted, newly minted CDs of the Second Year Show staged by the class 42 years ago. The show wears well and is ranked by Elvis Mitchell among the ten best Second Year Shows ever produced on Avenue Louis Pasteur or elsewhere. Selected members of the Dental School's 40th year class also attended the Vineyard party, a wonderful evening of reminiscences and updates. We're very grateful to Gordon and Phyllis.

On Friday evening, class members met for dinner at The Country Club. TCC has changed little since Francis Ouimet won the U.S. Open golf championship and certainly has not changed at all since we were interns. Politics replaced reminiscences as the principal topic of dinner discussion. On Saturday, a smaller group of classmates cruised the Charles.

For those of us who keep track, 19 states were represented at the reunion and we drew well from the faraway places, such as Florida, California, Georgia, and Oregon. One classmate had to choose between the reunion and Bulgaria.

The 40th reunion gift to Dean Joseph Martin for the Scholarship Fund was \$148,500. This is about five times our annual giving and was the goal we set out to achieve in a fundraising effort that involved many classmate-solicitors.

The Class of 1963 is very much in debt to the remarkable Alumni Association staff—particularly Jean Hurd—and to the local Planning Committee for the lovely evenings. Committee members were Gordon Vineyard (chair), Harley Haynes, Katie Wolf, Gordon Moore, Irene Brigglin, Dick Monson, Andy Warshaw, Marshall Wolf, Tom Halpin, and Bob Evans.

E. A. Robinson's old Eben Flood said that "many a change has come to [all] of us, I fear, since last it was we had a drop together," but, aside from increasing radiance, members of the class have changed little. ■



1968

### 35th—1968 David D. Oakes

The 35th reunion events proceeded on time and as scheduled. The clockwork efficiency will come as no surprise to those who know Jean Hurd and her associates in the Alumni Office—many thanks for their invaluable help.

Thursday evening was a cocktail party in the Minot Room at the Countway. Except for a lamentable absence of California wines, the event was an unqualified success. Conversation was nonstop as 23 classmates and guests reminisced and “reunited.”

Friday evening we reconvened for a reception and dinner at the Harvard Club on Commonwealth Avenue. Conversation flowed unabated. The Reunion Committee failed to provide for formal after-dinner speeches; no one complained. Eighteen of 36 attendees ordered beef. Are we ignorant, stubborn, or both?

Saturday afternoon Susan and Steve Pauker once again graciously hosted a

lobster-clam bake at their lovely Weston home. A rainstorm forced 52 of us to cower cheek-by-jowl inside a providentially provided tent. This only added to our sense of closeness and camaraderie.

Name tags were provided for all events, but for the most part were unnecessary; except for Laird, most of us have not changed that much.

I was sorry that Michael LaCombe did not attend. We are all grateful to him for faithfully chronicling our personal and professional lives. These periodic snapshots remind us of who we were, who we are, and who we hope to be.

In all 35 classmates (out of 141) attended at least one reunion event, as did 24 guests. Of these, approximately 70 percent had attended the 30th reunion in 1998; we must be doing something right!

Since 1998 we have lost three classmates—Robert A. Frederick, Alan B. Munro, and John P. Hejiniian. We note and mourn their passing. ■



# 1973

## 30th—1973 Barry Zitlin

Friends and classmates from near and far gathered for a fabulous 30th reunion that attracted around 40 members of the Class of 1973—a very good turnout, better than “good” but less than “superb.” Friday’s Alumni Day festivities featured gorgeous weather, a symposium led by Dan Federman ’53 (is he ever going to age?), a delicious lunch, and lots of laughs.

Some of us wandered into the Quad range buildings or took a tour of Countway Library. A few of us “stormed” into Vanderbilt Hall, past the recent grads moving out. We found our old rooms, took pictures around the tennis court, and marveled at the dorm upgrades (kitchens! elevators!) while mourning the loss of the beloved cafeteria space.

Our class gathered for dinner at the Museum of Science, but the beautiful views could not measure up to the joy of seeing old friends again. On Saturday, we paid the price for Friday’s perfect weather: our lobster feast at Mike Rosenblatt’s home was spent huddled together under tents to avoid the drenching downpours. Whatever the weather, everyone was

having so much fun (maybe the huddling was a good thing) that our spirits were barely dampened. The rain never let up: by the time we had to say goodbye, there was a lake in the Rosenblatt backyard!

Thanks to the Reunion Committee for all their arrangements and thanks to all who joined us. We expect a bigger turnout in 2008 and absolutely guarantee better weather for Saturday’s event. Oh yes, and we’ll all look as young as ever... ■

## Richard Peinert

The Class of 1973 returned for our 30th reunion with a respectable showing of about 40 classmates attending some or all events. I managed to miss the class photo but received one from our class oral historian, Linda Covell Davis. Too bad I missed the picture, because everybody is starting to look old except me!

We enjoyed a wonderful Friday night dinner at the Museum of Science that offered spectacular views of Boston and the Charles River. George Tully gave a one-minute speech, leaving plenty of time for all to get reacquainted. Mike and Patty Rosenblatt once again hosted our traditional feast at their lovely home on Crystal Lake. Talk of career and achievement has pretty much given way to reminiscences of the “old days,” family talk, and a cataloging of various ailments and joint replacements. We have a few career changes. Steve Bergman is now a venture capitalist and Jim Reinertsen is a full-time consultant. We also had a first time reunion returnee in Morgan Jackson, who wins the award for best-preserved member of the class.

A special treat was a DVD of the infamous Class of ’73 Ether Dome reenactment, along with some footage of Camp HMS during our first summer. I believe this was a joint effort of the Rosenblatts and Weinbergers. From 8 millimeter to DVD! Ain’t technology grand! Speaking of technology, the digital cameras were everywhere and every permutation and combination of class members was captured by any number of digital Eisenstaedts. Best of all, everybody truly enjoyed each other’s company. I’m looking forward to number 35! ■



# 1978

## 25th—1978 Roberta Isberg

As we entered Building A on Thursday morning, our enthusiasm for reconnecting had already been inspired by the refreshingly honest submissions to our 25th reunion report. We came to this reunion with a wealth of knowledge about our classmates and were able to deepen that understanding over the course of the three days.

Our class symposium was thoughtfully organized by Susan Okie and Nancy Rigotti to highlight the personal odysseys and professional achievements of our class. Bill Frist opened our morning session on "Fixing the Health Care System." He described how his medical background informs his work as U.S. Senate majority leader. Allan Detsky led us through a chronology of the SARS outbreak in Toronto, where he is physician-in-chief at Mount Sinai Hospital. His presentation described the discovery and containment of the outbreak, as well as the intense emotional experience of treating an epidemic among health care workers. Allan brought his unique capacity for wit, incisiveness, and controversy to this moving session. In our discussion

of "Plagues and Public Health Challenges," Charlie Van der Horst took us on a whirlwind tour of his AIDS projects in South Africa as well as his attention-getting methods of teaching sex education in North Carolina high schools. Kathleen Toomey described the challenges she faces as director of public health in Georgia. Responding to such diverse public threats as bioterrorism and the Walker County crematorium's illegal disposal of corpses, she has had to win the confidence of FBI agents and police officers.

The afternoon session began with the "New Pathways" that our classmates have taken outside of medicine. Rob Huienga showed a video from our Fourth Year Show as well as from a Hollywood movie inspired by his experience as internist for the Oakland Raiders. Joe Brewster showed a clip from his independent film, *The Keeper*, and highlighted the common goals of his cinematic and psychiatric work: reflecting truth and addressing conflict, particularly racism. We ended with a session on survival skills that addressed challenges we all face: "How Intimate Relationships Survive," by Bob Waldinger; "Balancing Personal and Professional Life," by Ouri Malliris; "Caring for Aging Parents," by Muriel Gillick; and "Personal Coping Skills to Survive a Malpractice Suit," by Lew Rose. Dinner in the Medical Education Center was attended by 84 of our 162 classmates, plus spouses and kids.

On Friday evening, Phyllis Carr and George Whitelaw graciously hosted a lovely dinner at their home. Far from the critical eyes of our teenage children, we were free to dance to our hearts' content and our musculoskeletal limits. On Saturday Roger and Marie Pasinski hosted a family picnic at their Nahant home, located on a beautiful rocky point that we toured in the rain. We brought home renewed motivation to stay in touch and to reunite in 2008. ■







1983

### 20th—1983 Edward B. Bromfield

The 20th reunion of the Class of 1983 began with the Alumni Day symposium and class picture, which included an enthusiastic group despite the absence of several late arrivals. Later on Friday afternoon, a small contingent, led by Randy Hickle, answered a challenge by the Class of 1978 to a basketball game at Vanderbilt Hall. Our more junior but no more youthful team had a commanding lead before the game was terminated by the inevitable injury.

On Friday evening, nearly 50 of us met at the beautiful Wenham home of Hank and Audrey Frissora for a dinner dance, the dinner provided by Stone Soup and the dance by Barrence Whitfield and the Savages. After enjoying the gourmet food, most of us stayed until the band had to pack up, proving that our class

can rock as long, if not quite as smoothly, as we did 20 years ago.

On Saturday afternoon, we made our way, along with several who had not been able to attend the night before, to Little Compton, Rhode Island, where we enjoyed a picnic with our families while looking out over Sakonnet Bay from Sherry Haydock's lovely summer house. The unsettled weather did nothing to diminish our enjoyment at reminiscing and catching up, as well as packing in the barbecue provided by Redbones. The younger and more adventurous were even able to get in a volleyball game and a walk to the beach.

Thanks to the efforts of many, particularly Ann Taylor, Hank, and Sherry, and to Jean Hurd and the Alumni Office staff, our 20th provided not only many new memories, but also a firm foundation on which to begin planning our 25th. ■

1988



#### 15th—1988 Edward Ryan

The Class of 1988 had a wonderful 15th reunion. Two days of events were kicked off with Alumni Day on the Quadrangle including our class photo. On Friday evening, June 6, the class met for cocktails at the Commonwealth Brewery in downtown Boston. Approximately 30 classmates were able to join this event. On Saturday, June 7, the class held a reunion picnic at Rocky Woods Reservation in Medfield, Massachusetts. About 35 members of the class attended, with most bringing spouses and kids.

The stormy day was saved by our large, covered picnic area. Ignoring the shelter, the children had a wonderful time playing in the rain, and we all enjoyed the barbecued chicken, spare-ribs, and assorted salads.

Everyone agreed that Jeff Ecker and Nick Blevins did a wonderful job putting together the 15 year report on the class. Many thanks should also go to Alan Hartford for organizing all the finances for the reunion events. (Alan enjoyed that trip to Bermuda...) Looking forward to the 20th. ■



# 1993

## 10th—1993 Mahalakshmi Halasyamani

The tenth year reunion for the Class of 1993 was a wonderful gathering attended by approximately 40 class members. The dinner at Davio's in Cambridge showcased the beauty of the Boston skyline and facilitated much reminiscing about our time together at HMS. The dinner itself was delicious, and we had to curtail lively conversation so that the wait staff could serve the meal.

The weather was not as cooperative the following day at the picnic on the Charles River. Rain waterlogged the attendees as well as the watermelon. Nevertheless, it was delightful to see so many children, who loved splashing in the mud. The reunion activities served their pri-

mary purpose, which was to reconnect and re-establish friendships that began with a common experience at HMS. Many of us look forward to our 15th reunion activities! ■



# 1998

own private dining room, the place abuzz with giddy folks dressed in their finest, the tables overflowing with laughter, stories, and renewed friendships.

We were graced by the presence of family members of our beloved late classmate Neil Ghiso, and members of Neil's HST class shared an emotional tribute filled with anecdotes. Before dessert, we went around the room to update each other on our lives. Listening to our classmates tell us about their childbirth stories (Jessica delivered Ann's baby, then Ann went on to become Jessica's baby's pediatrician), their business plans, and their international health involvement and altruism truly was the icing on the cake.

The following afternoon we gathered on the beach in Marblehead for a traditional New England clambake. Despite rain, there was laughter, clam chowder, husbands and wives, steamers, music, lobster, and pictures—lots of pictures. Our group picture at the clambake was a triumph: rows of accomplished and brilliant people, people who change the world every day—just simple folks, with the ones they love at their side, sharing that space with lifelong friends. Oh, what friends we have. ■

## 5th—1998 Larry Rand

In true Class of 1998 fashion, we set a record, having the largest number of attendees ever present for a fifth reunion. Forty-five of us joined together at the four-star Radius restaurant in downtown Boston, where we caught up while enjoying kumquat mojitos and lime rick-eyes. We devoured a stellar meal in our



## Life in the Slow Lane

**T**HOUGHTS AND THEORIES PERCOLATE in psychiatrists' brains as they seek to unravel the complexities of the human mind. But at least one psychiatrist has devoted his life to pursuing the empty mind. And now that he's retired from medicine, James H. Gordon '66 is putting to use his training as a lay monk in the Zen tradition by running a Buddhist retreat house in upstate New York.

Gordon became devoted to Buddhism in 1969 when he stumbled across a copy of a well-known work on Buddhist philosophy, *The Three Pillars of Zen*. "I knew immediately, after reading the book, that this was for me," he says. By the time the U.S. Army tapped him for service in 1971, Gordon had joined a Zen meditation hall—known in Japanese as a "zendo"—and was deeply committed to a philosophy that seemed incompatible with participating in armed conflict. He refused to enter the military on the grounds of being a conscientious objector.

Gordon was subjected to three separate interviews, with a clergyperson, a psychiatrist, and an Army representative. "The minister and the psychiatrist pronounced me sane and sincere," he recalls, "but the military guy claimed I was making it all up to avoid service." In the end, the Army refused to grant Gordon's request and he was arrested and threatened with a court-martial. Gordon filed a civil suit, and when it became clear to military authorities that were going to lose the case, they offered him his freedom in exchange for dropping the suit.

Other changes were on Gordon's professional horizon. While working as an internist in a neighborhood clinic in Brooklyn, Gordon took a psychiatry course for general practitioners and discovered a new vocation. After a three-year residency, he became a psychiatrist working in hospital settings with seri-

ously, often terminally, ill patients. Throughout this period, he continued his regular practice at the zendo, attended weeklong Zen retreats, and immersed himself in the related arts of the Japanese tea ceremony and calligraphy.

The zendo he attended for several years, Gordon says, was one of the best places then available for Westerners to study Zen Buddhism, which was only beginning to gain students in the United States: "In many ways, that zendo was the meditation world's equivalent to HMS at the time. I've been very fortunate to have had access to some of the best teachers both in medicine and meditation," he says. "Of course," he adds, "we were such beginners back then. To have our particular Japanese master guiding us was like having a col-

lege professor teaching preschoolers. He trained the first generation of American Zen practitioners."

In 1976, Gordon began studying with a new Zen teacher, who continues to instruct him vigorously to this day, even though the teacher is now 96 years old. The master relies on an English translator when giving talks. But in one-on-one sessions with students, the linguistic barriers do not present any impediments, Gordon says. "I know this must sound impossible to people not familiar with Zen practice, but the really great teachers can assess your condition merely by looking at you. Besides, nobody can do the work of enlightenment for you; only you can do the work for yourself. The master is there primarily to serve as an example. The student

**"I was working with very sick patients, many my own mortality. But my Zen practice gave**



**BRAIN DRAIN:** The meditation practice of zazen helps Gordon to unclutter his mind.

observes how the teacher is. The teacher makes suggestions to prevent the student from wasting time down blind alleys. And when you know, well, you know that you know. It's as plain as the nose on your face."

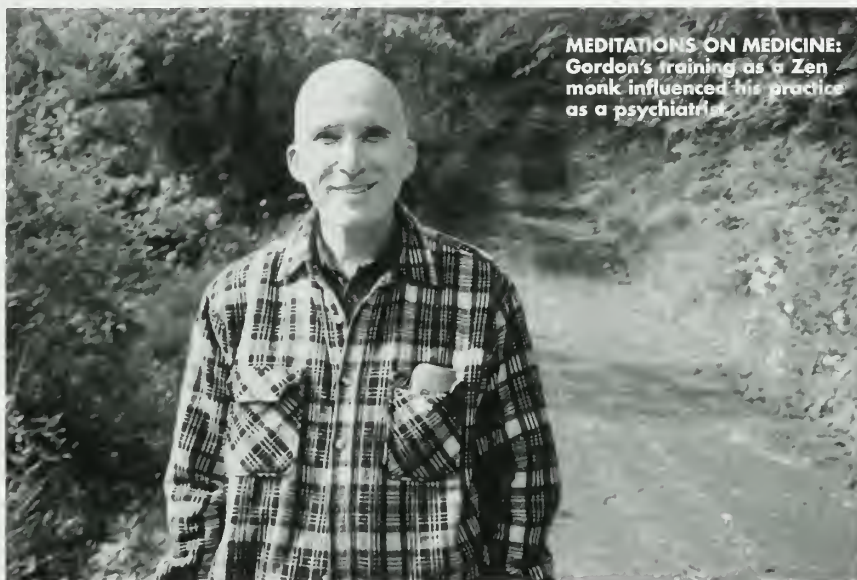
The basic work underpinning the Buddhist philosophy he follows, Gordon says, is the meditation practice known as "zazen." This practice of emptying the mind and cultivating a state of nonjudgmental awareness is a daunting challenge given the mind's natural, relentless stream of activity. Beginners might start by trying to sit for just ten minutes, gradually adding to the time as their skill level increases. While he was still practicing medicine, Gordon himself supplemented his daily, hour-long zazen practice with intensive weeklong retreats twice a year. These physically grueling retreats—



during which participants would engage in group practice sometimes from 3:30 a.m. to 9:30 p.m.—would help his understanding break open.

“It’s only recently that technology has been used to study what goes on in the brains of meditating people,” Gordon says. “What’s more important is that Zen practice really informs how you live.” It has certainly shaped the way he carried out his work as a psychiatrist. “I was working with very sick patients, many of whom were dying,” Gordon says. “Caring for them constantly reminded me of my own mortality. But my Zen practice gave me a demeanor that helped me calm my patients.”

It was an attitude that Gordon tried to impart to his students as well. For the last ten years of his career, he worked mainly



**MEDITATIONS ON MEDICINE:** Gordon's training as a Zen monk influenced his practice as a psychiatrist.

of whom were dying. Caring for them constantly reminded me of  
me a demeanor that helped me calm my patients.”

as an instructor, teaching medical interns interview skills and strategies for making the difficult transition from student to doctor. “Interns need to learn so many hard lessons, such as how to break bad news to patients, how to deal with angry people, how to deal with time pressures, and how to keep from getting burned out,” he says. “I tried to teach them by example, just as my Zen master has acted as a model for my own continuing meditation studies.”

It is doubly hard, Gordon believes, to work in medicine today, with managed care pressures and other stressors. “There’s a lot of suffering among doctors,” he says. “That old expression, ‘Physician, heal thyself,’ should really be connected to the notion of ‘Physician, *know* thyself.’ Cultivating a steady awareness can help doctors resist the tendency to get so

caught up in the stresses of the profession that they lose sight of why they entered medicine in the first place. And because Buddhism is not a proselytizing school of thought—you experiment so you can know for yourself—on one level, it resembles the scientific method in which doctors are trained.”

When Gordon and his wife, a psychotherapist and fellow student of Buddhism, met 12 years ago, he began planning for his deepest wish: to open a meditation center. Maitreya House, which they now run together in a bucolic Catskills setting in Roxbury, New York, is both a Zen center, offering a regular schedule of meditation practice, and a bed and breakfast. The idea was to create a place where people could rest, think, and refresh themselves. “I always knew,” Gordon says, “that if I ever got good

enough at Zen practice, I’d like to be able to provide such a retreat.”

After he left his psychiatry practice, Gordon says, he finally got the opportunity to contemplate the difference between knowledge and wisdom. He believes that students are taught a great deal of the former in medical school these days but not necessarily enough of the latter.

Although his lifestyle is modest by material standards, Gordon feels blessed to be leading what he characterizes as a remarkably rich life. “I’m ignorant,” he says, “and to go deeply into this work requires a long time. I like to think of myself as being in my 34th year of residency—and I still have a long road to travel.” ■

*Beverly Ballaro is associate editor of the Harvard Medical Alumni Bulletin.*

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